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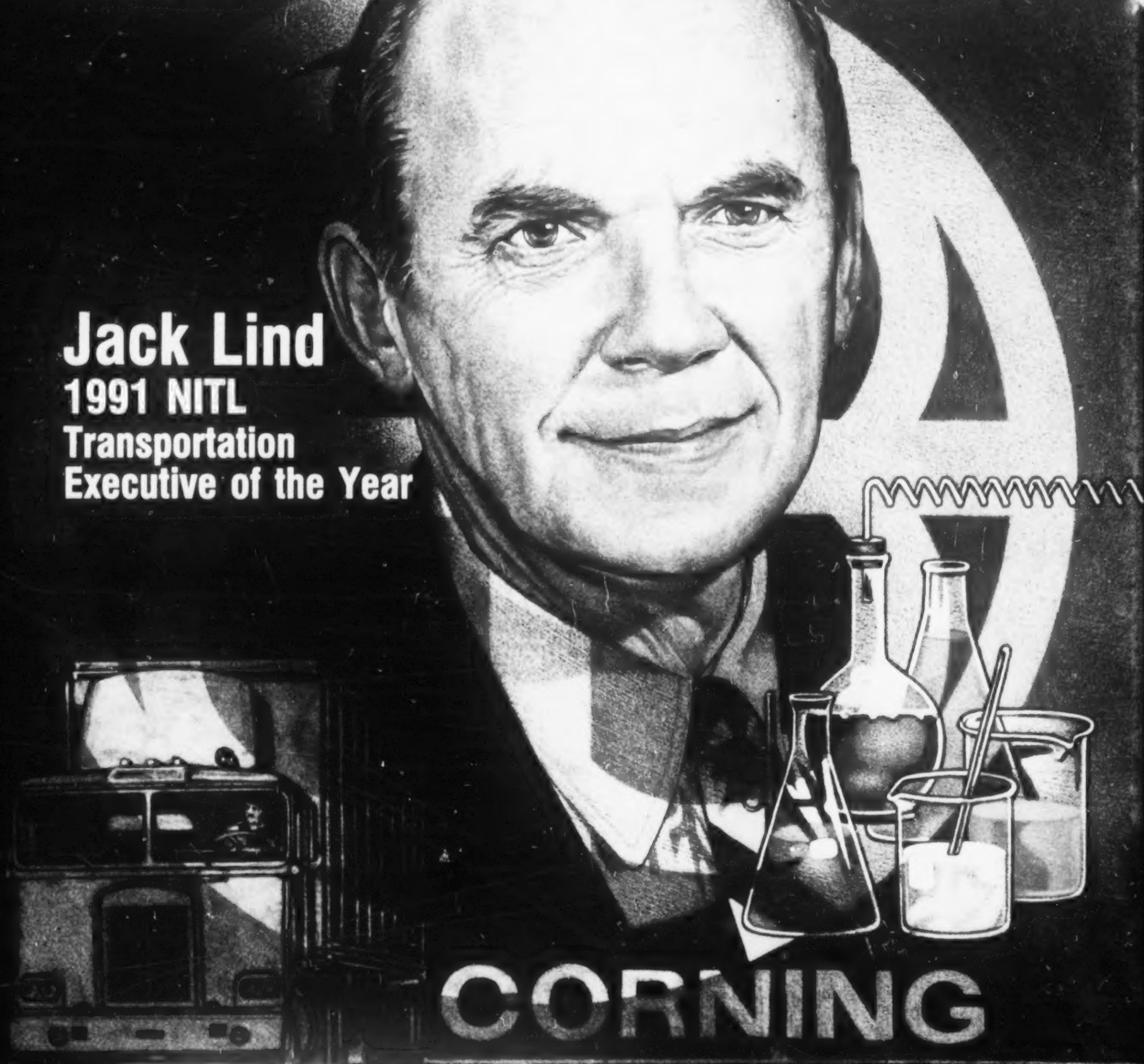

Jack Lind
1991 NITL
Transportation Executive of the Year

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How to manage your LTL

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NOVEMBER 1991

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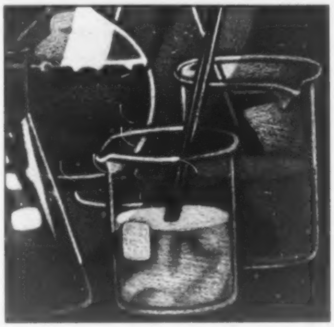
VOL. 90, NO. 12

COVER STORY

28 TRANSPORTATION EXECUTIVE OF THE YEAR

Corning's Jack Lind developed a system for "profiling" carriers in the early 1980s. The quality measurement system Lind pioneered is now a formal part of Corning's carrier management process. It's just one reason the National Industrial Transportation League has chosen to honor Lind this year.



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EDITORIAL STAFF

THOMAS A. FOSTER, ESQ. – Editorial Director
(215) 964-4379

JAY GORDON – Executive Editor
(215) 964-4385

E.J. MULLER – Senior Editor (West Coast)
(415) 769-0884

SHARON STRUCKUS – Senior Associate Editor
(215) 964-4387

EMILY HALL – Production Manager
(215) 964-4384

EDITORIAL FAX #: 215-964-4381

CONTRIBUTING EDITORS

JOSEPH V. BARKS (215) 964-4385
ROBERT J. BOWMAN (415) 752-4884
DR. JOSEPH CAVINATO (814) 863-2054
KURT HOFFMAN (301) 762-8250
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JAMES D. MARTIN (708) 256-8182
ROBERT SELWITZ (212) 877-3414
SY ZIVAN (212) 830-5357

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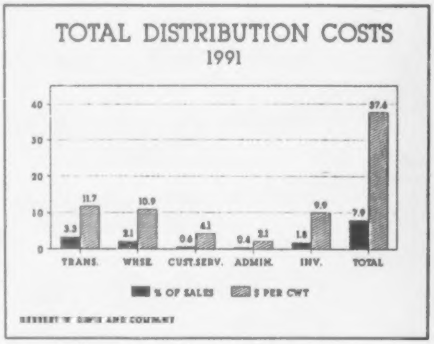
LOGISTICS TRENDS

Distribution costs on the rise, but this should be no surprise

Distribution costs have increased by the largest margin in at least 30 years, according to the 1991 Herbert W. Davis Database. Total distribution costs reported in 1991 (actually for calendar year 1990) had reached 7.93 percent of sales for the approximately 300 companies in the Davis survey. This amount was a 6.9 percent increase over 1989 results. In terms of cost per hundredweight, the average distribution costs in the 1991 survey were $37.64. The most significant cost increases were in transportation, which now amounts to 3.31 percent of sales, and warehousing, which now amounts to 2.03 percent. Herbert W. Davis, president of the Englewood, N.J., firm bearing his name, attributes the increases in these areas to management failures. "Carriers have developed more sophisticated marketing and analytical skills and tools than shippers have," says Davis. "Warehousing productivity is down despite the availability of better technology. Orders are getting smaller, but most companies haven't adapted to these changes." More troubling to Davis than the cost increases themselves is the breadth of the slippage. "More than 50 percent of companies in this year's survey experienced distribution cost increases, versus 25 percent in the 1990 survey," he says. "Only 28 percent of the companies this year were able to reduce costs."



Struggling to reduce costs

Penn State's Coyle honored by CLM for distinguished service

The man who helped Pennsylvania State University's Business Logistics Department get off the ground has been named the 1991 recipient of the Council of Logistics Management's Distinguished Service Award. Dr. John J. Coyle, professor of business logistics, has been in the field for more than 30 years. His logistics career started in the 1960s when he helped raise the funding necessary for the start-up of the Business Logistics Department. In 1989, he was a catalyst for the founding of the Center for Logistics Research there.

The Distinguished Service Award was inaugurated in 1965 as a tribute to John Drury Sheahan, a pioneer logistics consultant. A top priority in the selection process is the individual's contribution to the profession through educating others. Many of today's top logistics leaders' careers have been nurtured by Dr. Coyle's guidance.

The Council also presented the 1991 E. Grosvenor Plowman Award to Dr. Frank W. Davis, Jr., professor of marketing, logistics and transportation at the University of Tennessee, and Karl B. Manrodt, a doctoral student also at the university.

The award is presented to those individuals whose papers were judged to be among the best submitted for competitive review by a panel of educators and logistics executives at the Transportation and Logistics Educators Conference, the day before the annual CLM conference. The paper submitted by Dr. Davis and Mr. Manrodt was titled *Teaching Service Response Logistics.*

Coyle: A catalyst

CLM elects new officers for 1991-1992

Members of the Council of Logistics Management elected their 1991-1992 officers during their annual meeting in New Orleans. The new president is Ira (Blaine) M. Ross, Manager, Transportation Services for Bristol-Myers Squibb in New York. Other elected officers include: Robert Camp, Xerox Corp., as 1st vice president; Gary Sease, Servistar Corp., as 2nd vice president; and Franklyn Hathaway, Van den Bergh Foods, as secretary and treasurer.

The following chairpersons were appointed by Mr. Ross: Nancy Haslip, Digital Equipment Corp., as general conference chairperson; James Keebler, Hill's Pet Products, as planning chairperson; David Tarr, Pet Inc., as roundtable chairperson; Carl Evans, Keebler Co., as professional development chairperson; Bernard LaLonde, Ohio State University, as research chairperson; Joseph Andraski, Nabisco Brands, Margaret Emmelhainz, University of Dayton, and Kenneth Novak, W.W. Grainger, Inc., as current project chairpersons; and George Gecowets as CLM executive vice president.

CLM President Ira (Blaine) Ross

Trucking

A KINDER, GENTLER LTL RATE INCREASE FOR 1992?

Major LTL carriers are trying to make their rate increases easier for customers to swallow. Most carriers have announced their rate increases well in advance – and they're pledging that this increase will be the only one for the year.

1992 LTL RATE INCREASES

	1/1/92 Increase	6/91 OR	6/90 OR
Roadway	4.84	96.1	96.6
Yellow	5.0 (est.)	98.5	95.4
C.F.	*	97.5	95.5
Carolina	4.84	98.3	99.1
ABF	4.8 (est.)	96.3	94.7
Overnite	*	92.7	91.0

* Figures not available

Roadway Express has made itself the pricing leader by being first to announce the increase. "Having the effective date on January 1 helps shippers in their budgeting process," says Roadway President, Michael Wickham.

"Unacceptable margins"

David Stubblefield, vice president of marketing for ABF, agrees with Roadway's approach. "The times are gone when we can take increases a couple of times a year; it's expensive to do that," he says. Carriers must send out thousands of diskettes with the new rates, reload their own computers and jump through other administrative hoops.

Few shippers would argue that carriers need a rate increase. Operating ratios through the first half of 1991 have crept up two to three points for most carriers. "Return on equity is a not where we want it," says Dan Sullivan, executive vice president of Roadway Services. "The recession is the main problem, but competitive pricing pressures have narrowed margins to unacceptable levels."

"The concern is that if this is the only one (increase) you're going to have, you'd better stop discounting it away," adds Stubblefield.

Another carrier concern is that more and more LTL traffic moves under contract. "The problem (with contracts) is that you won't see the benefit of the increase right away," says Stubblefield. He says 30 to 40 percent of ABF's business is under contract. Many of these renew on April 1.

Tony Robertson, a trucking industry analyst with Alex. Brown & Sons, thinks the increase will stick. "Traffic has been picking up for most major carriers, and discounting has been moderating," he says. He's less confident that shippers will see only one increase in 1992. "If this recession really is over and the economy is coming back, I would be surprised if there were only one rate increase in 1992, regardless of what the carriers are saying now," he says. "The philosophy in the LTL industry is becoming, 'Take the increase when you can, not when you want to.' "

ROADWAY HAS A HEADSTART ON ALTERNATIVE FUELS

The clock is ticking on implementation of the Clean Air Act, which could bring many shipper and carrier trucking operations in 48 major cities to a screeching halt as early as 1994. But–one major LTL carrier is not waiting to see what happens when time runs out. Roadway Express has begun field evaluations of pickup & delivery (PU&D) vehicles powered by liquified natural gas (LNG) as a possible replacement for diesel and gasoline.

According to Don Dawson, Roadway's vice president of maintenance, engine emission requirements under the Act will become increasingly strict between 1994 and 1998, to the point that "non-complying cities may be off limits" to gasoline or diesel vehicles. "That is why PU&D vehicles would be the first to be converted from traditional fuels," says Dawson. "The fact that OSHA says diesel fuel is a carcinogen puts more pressure on us to look for alternative fuels."

Roadway evaluated various fuels including methanol, ethanol, liquid petroleum gas (LPG) and two forms of natural gas, compressed gas and LNG. Roadway's requirements for an alternative fuel? High energy relative to density, simplicity of use, low investment, minimal environmental impact and assured long-term supply. Dawson says all other alternative fuels had disqualifying characteristics. Methanol and ethanol are low energy, explosive and hard to handle. Methanol is quite toxic. LPG and compressed gas require too much space and weight on the vehicle. LNG is the best overall solution, he says.

According to Kenneth T. Cuccinelli, vice president of marketing and technology for Consolidated Natural Gas, a joint venture partner in Roadway's tests, LNG is safer and more economical than diesel, and it burns cleaner than either gasoline or diesel, so it reduces the maintenance cost on engines.

The best solution

LOGISTICS' EVOLUTION CONTINUES

Ohio State University's 1991 Career Patterns Survey reveals several subtle shifts that indicate how logistics is evolving as a discipline. The first of a two-part series.

By the Logistics Research Group, Ohio State University

For the last twenty years, the Logistics Research Group at The Ohio State University has performed an annual survey of the career patterns of senior logistics executives in major American corporations. The purpose of this work is to establish baseline information regarding the status of logistics as a profession, as well as to gain an understanding of how firms have integrated the logistics function into their organizational structures and to determine the specific responsibilities of a logistics executive in a typical firm.

The 1991 Survey of Career Patterns in Logistics specifically addresses the following questions:

- How have successful firms structured, organized and managed their logistics functions?
- What is the demographic profile of the logistics executive?
- What factors will shape the future direction of the logistics function within American corporations?
- What forces will contribute to the decentralization or centralization of logistics?

This last question was new to the 1991 Career Patterns survey, and the results will be discussed in depth in a separate feature to appear in the January 1992 issue of DISTRIBUTION.

Methodology

This year's results are based on our analysis of responses to a five-page questionnaire distributed to 768 members of the Council of Logistics Management during July and August 1991. Each company received only one questionnaire routed to the senior logistics executive in the firm; a total of 200 valid responses were received, yielding a return rate of 26 percent. Because the exact identity of our sample population is unknown, extensions of our findings beyond the sample to the entire population of logistics executives can only be made with an undeterminable statistical risk. For these same reasons, comparisons of this year's results with prior surveys would encounter similar problems. Nevertheless, we believe that the size of the survey response and the obvious care which respondents demonstrat-

continued

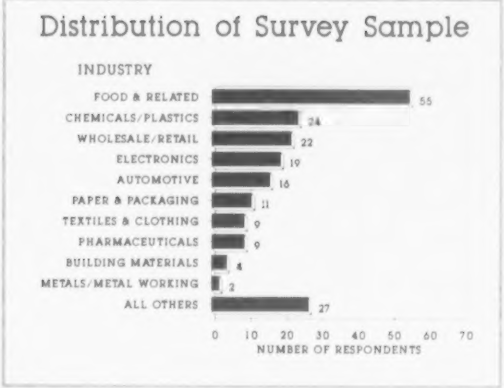
DIMENSIONS OF THE LOGISTICS FUNCTION

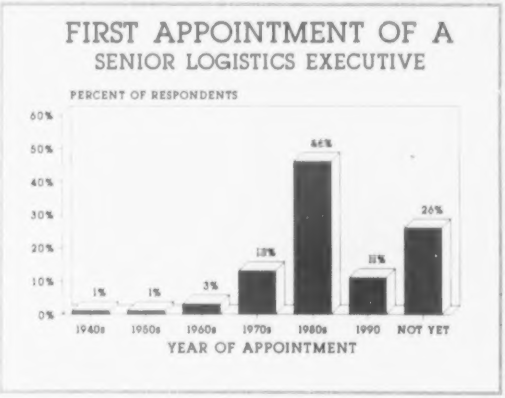
Dimension	Logistics Activity	Direct Responsibility	Time Spent
Warehousing	97%	83%	19%
Traffic Management	96%	81%	19%
Inventory Control	79%	60%	10%
General Management	79%	65%	21%
International Distribution	76%	61%	7%
Plant/Warehouse	74%	43%	7%
Order Processing	58%	31%	6%
Packaging	51%	19%	3%
Order Entry	49%	24%	3%
Procurement	49%	31%	7%
Product Planning	40%	18%	4%
Sales Forecasting	32%	14%	2%

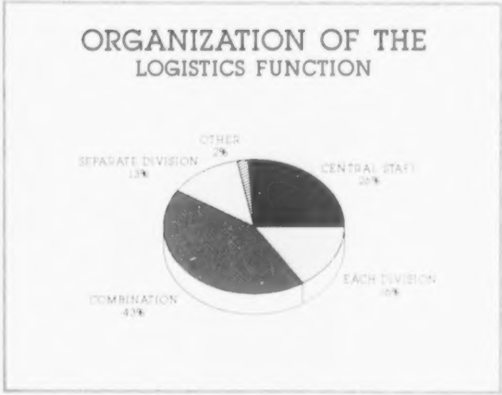
ed in completing the survey indicate that the sample results have validity in themselves, and that we can reasonably consider them roughly representative of the entire population of logistics executives.

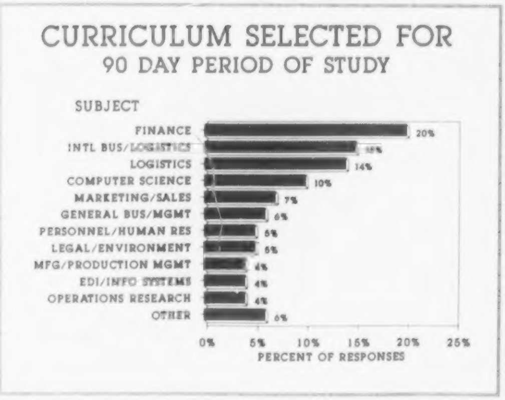
We asked the respondents to classify the nature of their business. The results show great diversity across industry categories *(p. 40)*. The food related products group represented the largest percentage, 25 percent, of the response. No other group accounted for more than 12 percent. The survey response also appears highly heterogeneous regarding the size of the firm. We asked respondents to estimate the firm's annual sales volume or gross revenue. Answers varied widely: the surveyed firms had a median sales volume of $850 million. Five percent of the sample firms reported revenues at or below $80 million, while at the other extreme five percent of the firms had revenues of $14 billion or more. The reader should carefully consider the comprehensive range of the survey; the statistics reported include averages representing both large and small firms.

The survey results have been grouped into four major categories. First, we will discuss the organizational profile of logistics in the firm — how the firm has structured itself to perform the logistics functions. Next, we will address the operational profile of the firm to show the scope and dimensions of logistics responsibilities in the firm. Third, we will develop the demographic profile of the contemporary logistics executive in terms of age, experience, education


Distribution of Survey Sample


FIRST APPOINTMENT OF A SENIOR LOGISTICS EXECUTIVE


ORGANIZATION OF THE LOGISTICS FUNCTION


CURRICULUM SELECTED FOR 90 DAY PERIOD OF STUDY

and compensation. Fourth, we will report what executives see as future trends in logistics management.

An Organizational Profile

Sixteen percent reported that a logistics department existed in each division of the firm, while 26 percent said the logistics function consisted of a central staff *(p. 40)*. An additional 43 percent report a split of the logistics function, with some functions performed by a divisional department and some responsibilities residing in a central staff.

We asked the respondents whether they considered their job primarily line or staff in nature. Line functions have direct responsibility and control over logistics decision making, while staff functions primarily perform an advisory role. Thirty-six percent indicated that their job involved direct responsibility, while only three percent viewed their role as purely advisory. The remaining 60 percent reported that their position included direct responsibility over some logistics functions and advisory responsibility over others.

In an attempt to gauge the maturity of the logistics organization, we asked the year the firm first appointed a senior executive-level manager with a formal title and responsibility in distribution or logistics. A "senior" position was defined as one at the vice-president level. Since 1980, firms have established such a position at a rate exceeding four percent per year *(p. 40)*. However, 26 percent of the firms have not yet established a senior logistics executive.

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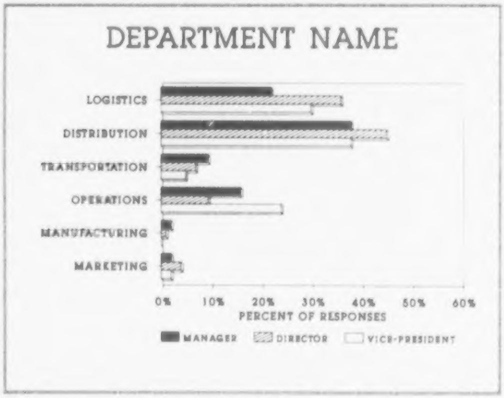
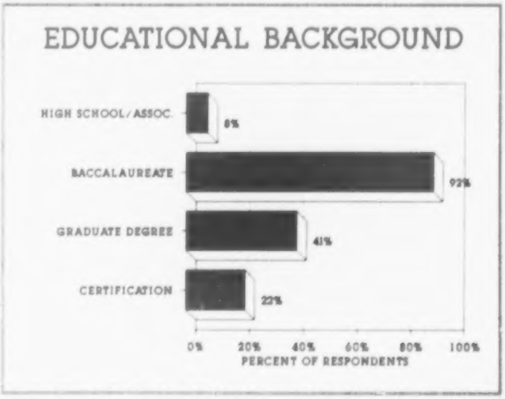
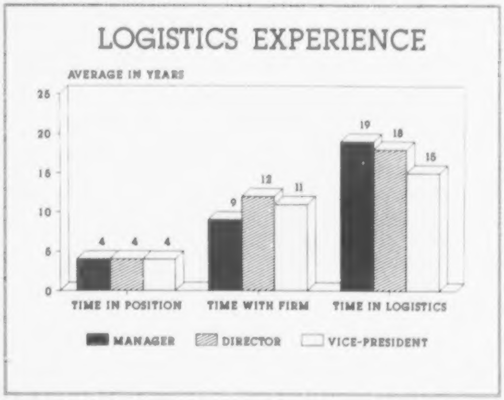
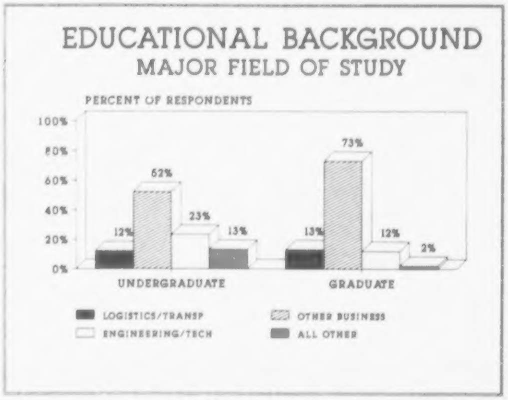








The survey respondents held positions at three management levels. Twenty-eight percent of our respondents had job titles as managers, 45 percent were directors, and the remaining 27 percent held vice-president positions within their firm. Most of the executives work in a department called "Logistics" or "Distribution." Only a small proportion work in a department titled "Transportation," "Operations," "Manufacturing" or "Marketing."

A Demographic Profile

In an attempt to measure the scope of the logistics function, each respondent was presented with a list of traditional logistics activities and was asked to specify if the activity was considered to be a logistics function by the firm, if the respondent had direct responsibility over the activity, and how much time the respondent spent in the activity. The results indicate an almost universal view of traffic management and warehousing as part of the logistics domain *(p. 38)*. On the other hand, only 40 percent of these executives worked on product planning, and only 32 percent had involvement in sales forecasting.

LOGISTICS EXECUTIVE COMPENSATION (annual salary plus bonus)

JOB TITLE	HIGHEST THIRD	MIDDLE THIRD	LOWEST THIRD
Manager	$ 99,000	$ 66,000	$ 53,000
Director	115,000	90,000	68,000
Vice President	195,000	136,000	105,000

HISTORICAL COMPENSATION COMPARISON

Year	Manager	Director	Vice-President
1991	$66,000	$90,000	$135,000
1990	60,000	85,000	125,000
1989	65,000	80,000	105,000
1988	57,000	75,000	122,000

Our average logistics executive has held his or her current position for four years, has been with the same firm for ten years, and has worked in logistics for about 17 years *(p. 41)*. Respondents at all levels of responsibility, manager through vice-president, follow the same general pattern. An executive position in logistics is seldom a short-term, iateral career move for an individual whose expertise is in another area. Rather, the typical logistics executive has an extensive background in logistics and has worked his or her way up to a position of authority. The typical respondent is 42 years old. The distribution of ages ranges from the late 20s to the mid-60s. Ninety-six percent of the respondents are male — and four percent are female!

The educational background of the respondents provides further evidence of the professional nature of the discipline. Ninety-two percent hold a baccalaureate, and 41 percent hold graduate degrees *(p. 41)*. In addition, 22 percent of the respondents hold some form of professional certification. Seventy-five percent of the respondents hold baccalaureate degrees in business (including logistics), and 86 percent of the advanced degrees were in business (virtually all MBAs). We found that the percentage of logistics and transportation degrees has continued to grow, and that the academic programs initiated over the last two decades have increasingly contributed to a professional logistics workforce. We also asked each respondent to choose the subjects he or she would study if permitted to return to campus for 90 days *(p. 40)*. Many topics emerge, but the most often mentioned area was Finance, followed by International Business/Logistics, Logistics and Computer Science.

Executives reported their total annual cash compensation, including salary and bonus *(p. 42)*. The statistics reported are median values for the highest third, middle third, and lowest third of each job category. Statistical analyses were performed to determine which factors might

continued

help "predict" a respondent's salary level. Age, years in the position, and years in the firm show no statistically significant relationship to compensation. Level of responsibility, as measured by job title, is the single most important predictor of compensation. The firm's sales volume also correlates positively with compensation and helps in predicting an executive's salary level. Comparing this year's compensation data with that of prior years suggests a slight upward trend. Interpretation becomes difficult due to differences between samples from year to year.

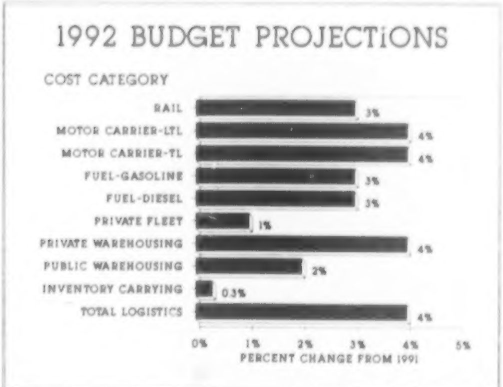
Logistics' View of the Future

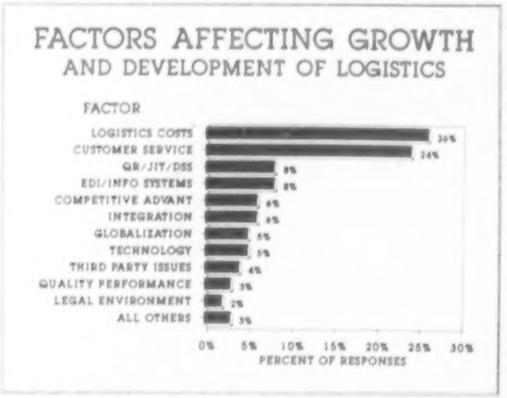
Executives estimated how elements of their 1992 logistics budget would compare with actual expenses incurred in 1991. The results show a projected four percent growth in total logistics costs over 1991. Growth in individual cost categories ranged from four percent for motor carrier rates (TL and LTL) and private warehousing, to 0.3 percent for inventory carrying costs. *(p. 44)*

Survey participants also answered a series of questions to capture their forecasts about the future of logistics. First, respondents identified two major factors which would influence the growth of the corporate logistics function in the next decade. Responses varied widely, but 26 percent of the responses identified logistics costs as a primary factor, and another 24 percent identified customer service *(p. 44)*. Most of the categories are self-explanatory, but a few require comment. "Integration" includes respondents who feel that their logistics functions require closer integration with other functions such as marketing and production, or that logistics must incorporate "new" activities such as purchasing into its area of responsibility. "Competitive Advantage" suggests using logistics to gain a competitive edge in the marketplace through lower total cost, improved productivity, reduced cycle time, incorporation of new technology and superior customer service. ■

Editor's Note: What is driving logistics organizations to centralize or decentralize? For companies that restructure, what impact has it had on performance? These are some of the questions the Career Patterns survey asked this year. DISTRIBUTION will report the results of this part of the survey in Part Two of this feature, which will appear in the January 1992 issue.

The Logistics Research Group at The Ohio State University consists of Dr. James M. Masters, Assistant Professor of Logistics Management; Dr. Bernard J. "Bud" LaLonde, Mason Professor of Transportation and Logistics; and Capt. Terrance L. Pohlen, USAF, Research Associate.





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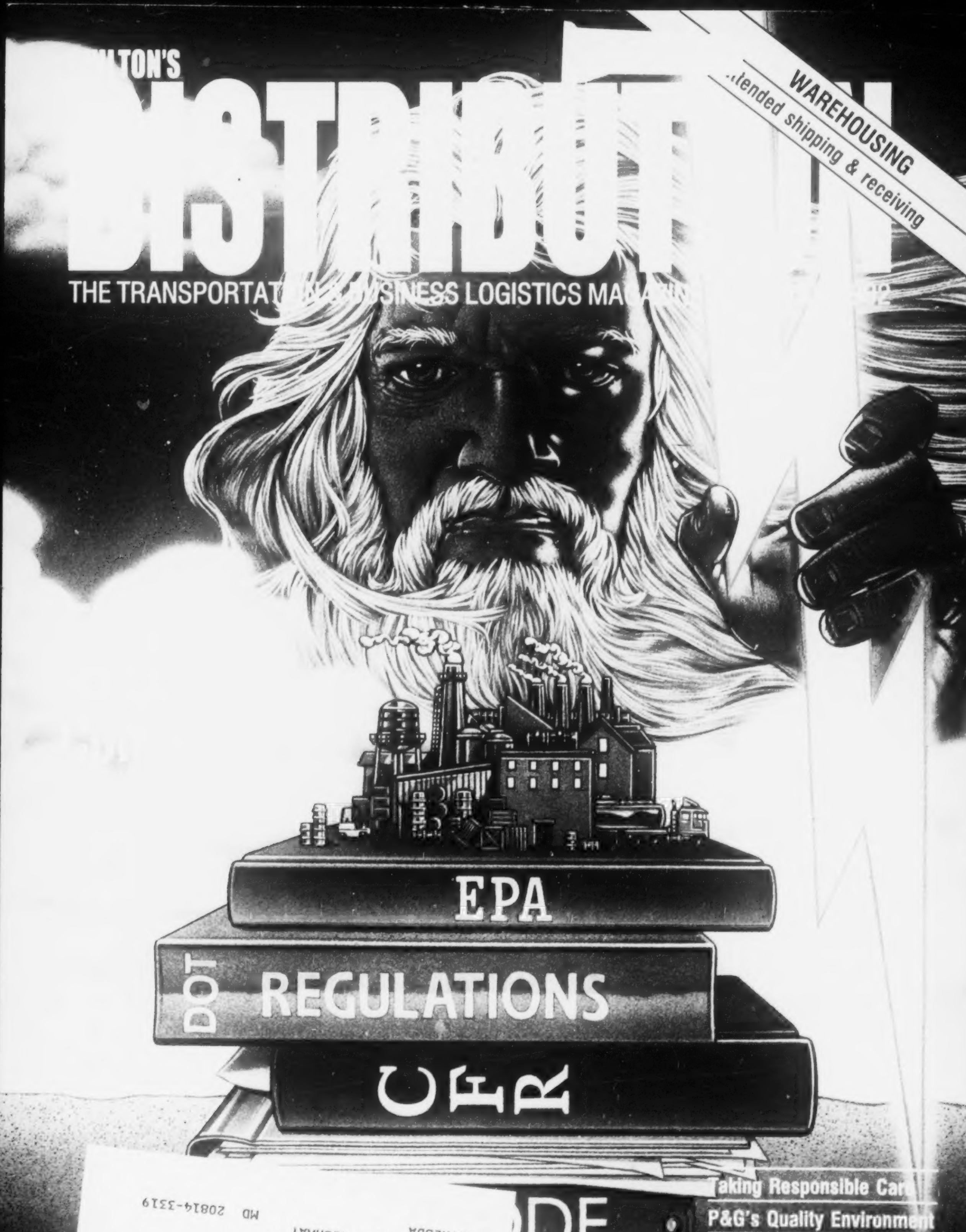

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COVER STORY

26 THE GOSPEL OF GREEN

Industry is being deluged with environmental rules directed at every stage of the supply chain. Compliance will cost hundreds of billions of dollars. Yet the public is demanding it; your customers are counting on it. Logistics managers are in a perfect position to manage these issues effectively for their companies. Are you ready to do the right thing?

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Procter & Gamble believes that maintaining leadership positions in its product categories depends to a great extent on its ability to make waste management a Quality issue.

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An Ohio State survey shows a slight trend toward centralized logistics organizations, as issues of cost and control win out over empowerment and getting close to customers.

52 RESPONSIBLE CARE GAINS RESPECT

Shippers, carriers, distributors and industry observers have come around to the conclusion that the chemical industry's all-encompassing environmental program is for real—and bound to get better.

56 INTEGRATION IN THE AIR

Last April, CNS set an industry milestone. While many believed it would never happen, international airlines and U.S. airfreight forwarders met face-to-face. Was it successful? And will it ever happen again?

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Next Month: ***Service Industry Logistics***

EDITORIAL STAFF

THOMAS A. FOSTER, ESQ.—Editorial Director
(215) 964-4379

JAY GORDON—Executive Editor
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CONTRIBUTING EDITORS

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SY ZIVAN (212) 830-5357

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Director of Physical Distribution
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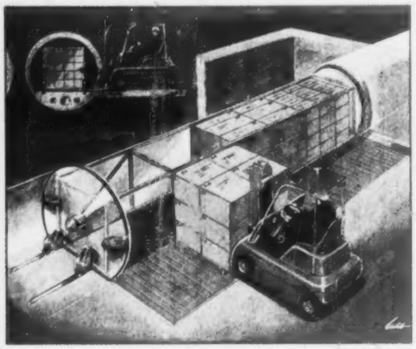
LOGISTICS TRENDS

Will pneumatic pipelines one day ease interstate congestion?



Moving freight pneumatically

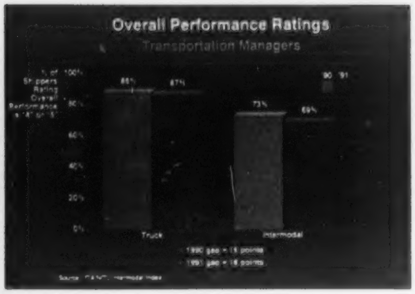
It seems like an implausible concept, but then so was a national highway system at one time. The idea is an underground freight transportation system called Subtrans. The brainchild of a New Jersey company called TubeXpress, Subtrans is a proposed network of underground pneumatic tubes providing computer-controlled transit of cargo "capsules." The advantage of the system, proponents claim, is less traffic congestion, less freight damage, faster movement of goods, fewer environmental issues and greater security. The disadvantages? An inability to move out-sized freight—and, of course, the small matter of funding such a radical concept.

William Vandersteel, a TubeXpress executive, says the concept is sound; he points out that the U.S. oil pipeline network is the nation's largest transportation system, measured in ton-miles. Making the leap to a *solid* freight pipeline presents a major challenge, however. The volume per freight capsule is about one-tenth of a 40-foot trailer. But like a JIT disciple, Vandersteel stresses that Subtrans would provide for fewer, more frequent shipments. He envisions Subtrans running in the underground ducts beneath the center divider of interstate highways, with branch lines connected to the main system, and even individual branches for exclusive business use. Subtrans would use concrete pipes, 7 feet in diameter, with rail tracks embedded in a flat concrete floor. Each capsule would have 300 cu. ft. of capacity (about 8 tons) and move at an average speed of 65 mph.

"When the interstate highway system was proposed in the mid-1950s, the huge investment was readily justified in terms of the impact it would have on the nation's economy," Vandersteel says. "A nationwide Subtrans system would require an investment that is less, but comparable, to the interstate highway system, but not much more than is necessary to expand the existing system to accommodate the traffic growth which Subtrans could absorb."

Subtrans would be costly to build, but Vandersteel says low maintenance and energy costs, over time, make it more cost-efficient than either rail or truck. He seeks a federal commitment to study the economics of a full-scale system. "That the technology works is not a question," he says, pointing to Russian and Japanese versions of the concept. "It's only a matter of time before it develops (here)."

New index shows intermodal must do better at selling itself



Needed: a big sell

Intermodal's overall performance rating versus motor carrier service has slipped ever so slightly, yet more shippers are trying intermodal—and current users continue to divert traffic from truck to intermodal service. Further gains appear to go unrealized because intermodal's upbeat message is not being communicated to shippers.

These are the main themes of the 1991 Intermodal Index, the second installment of a five-year market research effort being sponsored by the National Industrial Transportation League and the Intermodal Association of North America. Conducted by consultants Temple, Barker & Sloane, the Index surveys more than 500 shippers annually to determine their perceptions of intermodal versus trucking service.

In overall performance ratings, truckers actually widened the gap between the two last year. Yet six percent more shippers used intermodal in 1991 than in 1990, and 34 percent said they had shifted some traffic to intermodal from trucks in the past year. Still, non-users perceive that truck service has improved far more than intermodal has, and the intermodal industry apparently isn't doing enough to combat that perception. Shippers were asked how often they were called on by carriers not presently serving their firm. Thirty-six percent said they'd been visited by a trucking rep in the past week; only 7 percent were called on by an intermodal salesperson. Likewise, 32 percent said they'd never been called on by an intermodal rep, versus only 4 percent who said they'd never been called on by a trucker they do not currently use.

FOR LOGISTICS, A SUBTLE SHIFT IN ORGANIZATION

An Ohio State survey shows a slight trend toward centralized logistics organizations, as issues of cost and control win out over empowerment and getting close to customers.

By the Logistics Research Group, Ohio State University

Ohio State University's 1991 Survey of Career Patterns in Logistics included a special section focusing on factors influencing the centralization or decentralization of the logistics function within the firm. Many firms have made organizational changes aimed at increasing or decreasing the degree of centralized planning and control of logistics. Executives were asked several questions to elicit the most important factors driving firms' organization strategies.

The factors driving decentralization of logistics functions had two major orientations: Meeting customer requirements and driving authority down to lower management levels *(Figure 1, right)*. However, the range of responses appeared almost evenly divided among the major categories. Customer-focused strategies accounted for 44 percent of the responses. Specific factors identified included the need to quickly respond to customer demands, segmented handling of a frequently differentiated customer base, getting closer to the customers to better understand their operations, and improving overall customer service. Factors affecting local decision-making authority appeared in 35 percent of the responses. The factor of decentralized decision-making authority occurred in the forms of autonomous business units, the move toward local decision making to increase responsiveness, exploiting technology to permit decentralized management access, and empowering the workforce to make decisions or have greater input to the decision-making process.

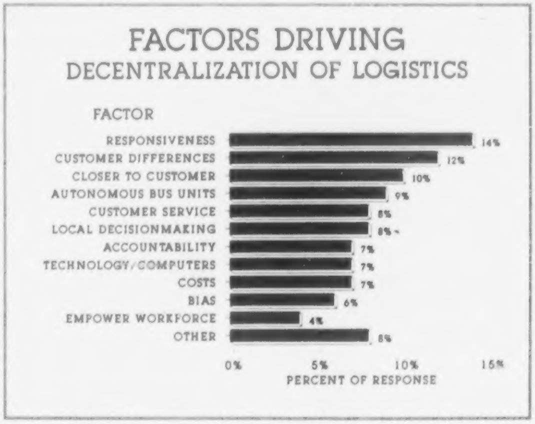


Figure 1—Empowerment and responsiveness are key themes for advocates of decentralization.

The primary factors driving centralization of the logistics function centered on cost, management control and resource availability *(Figure 2, p. 50)*. Cost control, negotiation leverage, economies of scale, and computers/technology accounted for 50 percent of the responses. The executives identified centralization as a means to lower operating costs while maintaining or improving productivity. A centralized logistics operation would enable greater control over costs through increased leverage in negotiations, better economies of scale, and less duplication of existing or developing computer data bases and technological improvements. Thirty-two percent of the executives cited management control as a factor driving centralization in their firms. The responses indicated a need for centralized strategic planning, coordination of management action and execution, overall focus on customer service, and a single point of contact for strategic alliances and third-party relationships.

Several executives also identified the lack of personnel, equipment and other resources as major forces arguing for centralization of logistics functions.

Six percent said resource limitations were driving centralization, and a similar number mentioned corporate downsizing. Limited expertise and availability of equipment precluded delegation of decision-making authority. Downsizing and consolidation to streamline overhead would prevent duplication of functions between central staffs and decentralized operations.

continued

Most respondents agree that their firm has increased the centralization of the logistics function over the last five years, although a healthy minority disagree *(Figure 3)*. Attitudes about the consequences of decentralization/centralization are also diverse. As evidenced here, considerable disagreement exists over whether decentralization enables the firm to "get closer" to the customer *(Figure 4)*. Similarly, executives split on the proposition that decentralized decision making results in more direct managerial accountability *(Figure 5, p. 51)*.

Executives were asked to indicate whether specific logistics functions became more or less centralized during the period from 1985 to 1991, and to project whether the functions would become more or less centralized during the period from 1992 to 1995. During the period from 1985 to 1991, 20 to 50 percent of the firms reported increases in centralization, while five to 15 percent of the firms were moving to decentralize these functions *(Figure 6)*. The same basic pattern emerges in the projections for 1992 to 1995, except that a significant number of executives indicate that they will decentralize their Customer Service and MIS functions *(Figure 7)*.

The results of the 1991 Survey of Career Patterns in Logistics lead to several conclusions:

1. Logistics career patterns continue to remain stable. The survey demonstrates a large number of experienced logistics professionals have cultivated successful careers in the discipline. Executive salary levels may have begun an upward climb after having leveled off during the past several years.
2. A continued broadening of the logistics function of the firm and the responsibilities of the chief logistics executive remains an ongoing trend. "Procurement" retained its relative importance ranking behind warehousing, traffic management and inventory control in terms of time allocation. The chief logistics executive also reported a high level of direct or advisory involvement in packaging, product planning and sales forecasting.
3. The majority of executives surveyed have experienced organizational trends aimed at increasing or decreasing the degree to which the planning and control of logistics functions is centralized in the firm. These trends appear to be focused on improving customer support, reducing costs, increasing local decision making authority and ensuring management control. While the survey did not indicate a strong movement in either direction, the responses suggest that a wide variety of forces guide a firm's organizational strategy. ■

The Logistics Research Group at The Ohio State University consists of Dr. James M. Masters, Assistant Professor of Logistics Management; Dr. Bernard J. LaLonde, Mason Professor of Transportation and Logistics, and Capt. Terrance L. Pohlen, USAF, Research Associate.

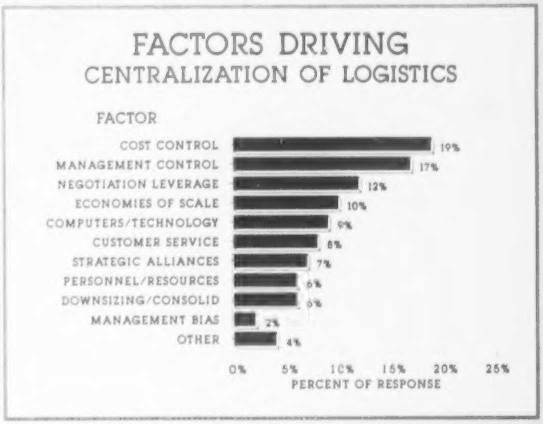


Figure 2—Logistics executives say centralization helps lower costs while improving productivity.

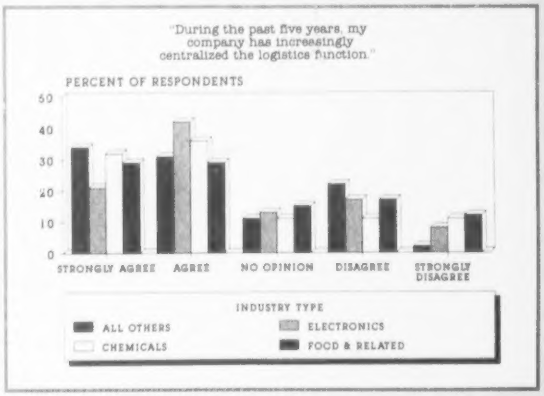


Figure 3—Logistics is increasingly centralized, though a healthy minority resists the trend.

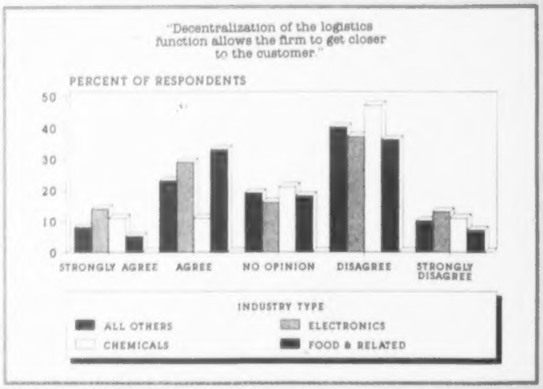


Figure 4—Does a decentralized approach to logistics really help firms get closer to customers?

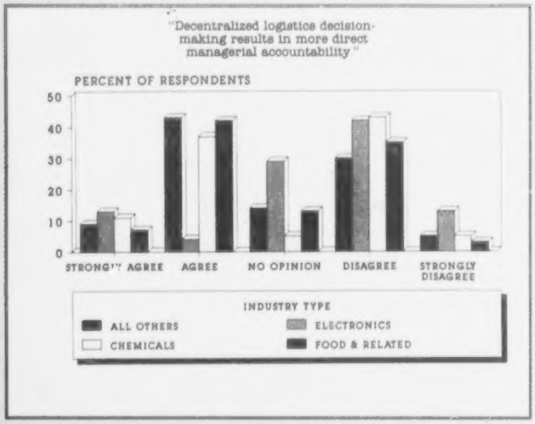


Figure 5—Executives also remain unconvinced that a decentralized structure increases accountability.

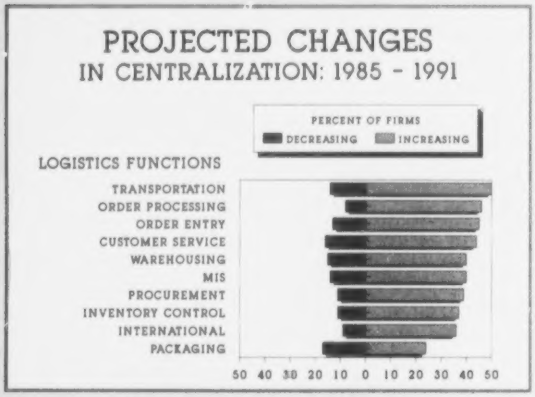


Figure 6—In the past five years, firms have moved to centralize almost every logistics function.

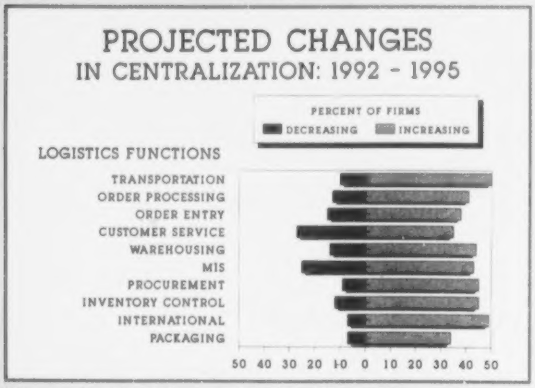


Figure 7—Is a change in the offing? Many firms say they will decentralize customer service and MIS.

CENTRALIZED MIS MAKES SENSE FOR NYNEX

For a rapidly growing company, centralizing logistics and management information systems often represents the best way to handle higher volumes of business with the fewest assets. That certainly has been the experience of Nynex Business Centers, which provides personal computer equipment and services to Fortune 1000 companies.

Nynex has 77 business centers in 30 major U.S. cities, some of which were acquired from IBM in 1986. At that time, Nynex was using a Wang VS 100 to support the inventory, accounting and logistics needs of 21 business centers in the Northeast; the IBM facilities, meanwhile, ran off of a System 38 that interfaced with IBM's distribution and accounts receivable systems and monitored the cash registers in the stores. While the Wang met Nynex's needs at the time, it was clear it could not handle the volume of business Nynex expected after the acquisition.

So Nynex went shopping for an integrated package that would consolidate the two systems. At the top of the shopping list was software, and Nynex chose the DCS/Logistics® system from Andersen Consulting. "DCS/Logistics was one of the few software packages that had all of the functionality we were looking for, plus an integrated accounts receivable system, which was a real bonus," says Les Levy, director of application development for Nynex Business Centers.

For the first six months the Wang and DCS/Logistics systems ran simultaneously. By mid-1987 Nynex had eliminated the Wang system, running DCS/Logistics on an IBM 3090 computer. An immediate benefit: tighter inventory control. Before DCS/Logistics was implemented, Nynex counted on the business centers to be the fulfillment arm of the company. Product would be transferred to the business centers, and customer orders would be shipped from those locations. But as Nynex grew and orders became larger, this type of decentralized inventory control became unworkable. Since each branch was a profit center, people in the field were reluctant to move inventory between centers because they might not have it when an order came in—so inventories were higher than necessary.

Now, 75 percent of Nynex's orders are entered online though a local area network at the business centers. With inventory and information centralized, Nynex has substantially improved customer service levels. Inventory levels have been reduced, and fewer inter-branch transfers helped Nynex double its volume without increasing freight costs. Marketing has benefited also; it now has a clear picture of order status and product availability.

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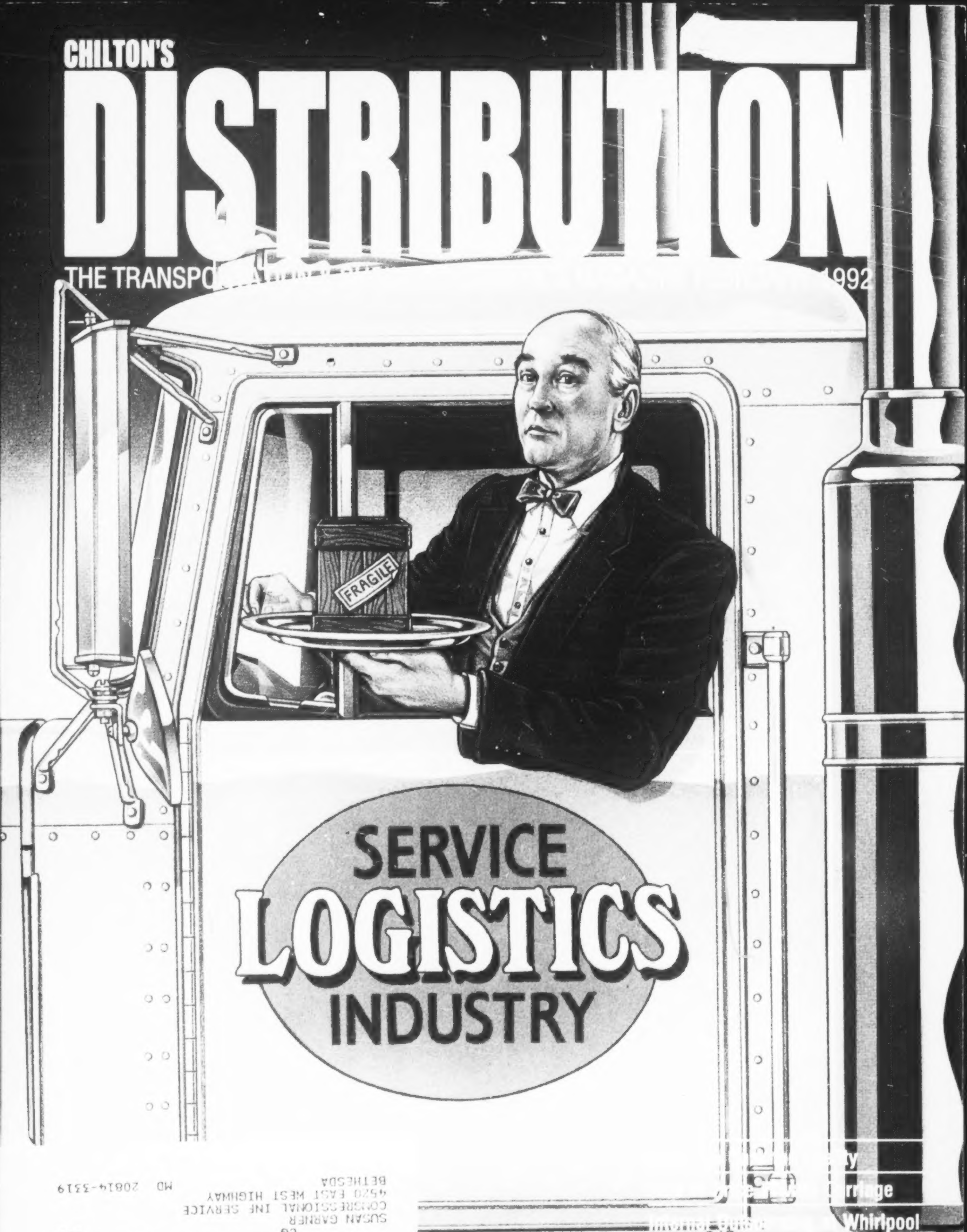

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COVER STORY

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Three of every four existing jobs, and nine of every 10 new jobs, are in the service sector—an entirely new set of opportunities for logistics career advancement. But are the skills and strategies used in manufacturing logistics transferrable to the service sector? And are there logistics practices in the service sector that could be applied in manufacturing?

EDITORIAL STAFF

THOMAS A. FOSTER, ESQ.—Editorial Director
(215) 964-4379

JAY GORDON—Executive Editor
(215) 964-4385

E.J. MULLER—Senior Editor (West Coast)
(415) 769-0884

SHARON STRUCKUS—Senior Associate Editor
(215) 964-4387

EMILY HALL—Production Manager
(215) 964-4384

EDITORIAL FAX #: 215-964-4381

CONTRIBUTING EDITORS

JOSEPH V. BARKS (215) 964-4385
ROBERT J. BOWMAN (415) 752-4884
DR. JOSEPH CAVINATO (814) 863-2054
KURT HOFFMAN (301) 762-8250
STANLEY HOFFMAN (203) 790-4195
RICHARD MALKIN (718) 343-7718
JAMES D. MARTIN (708) 256-8182
ROBERT SELWITZ (212) 877-3414
SY ZIVAN (212) 830-5357

FOREIGN CORRESPONDENTS

ANDREW TAUSZ—Canada
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EDITORIAL ADVISORY BOARD

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HOW SERVICE DRIVES LOGISTICS

FRAGILE
SERVICE
LOGISTICS
INDUSTRY

The flight of capital, and jobs, from the manufacturing base of our economy into the service sector is accelerating. As a result, logistics must embrace a broader definition of its responsibilities, one that includes management of information and human resources as well as goods and materials.

By Jay Gordon, Executive Editor

Welcome to the dawning of the *Service Era*.

That's the name that Frank W. Davis Jr., professor of marketing & logistics at the University of Tennessee, gives to what he foresees as the next major period in business development. In the Service Era, companies will focus on delivering *benefits* to customers—not goods or services. Cost minimization and revenue maximization will no longer be viewed as the keys to profitability; *yield*, a measure of cost effectiveness, will take their place.

If you think that type of corporate mindset is still a long way off, consider that we've been laying the groundwork for it for the past 40 years. The U.S. has been rushing toward a service-based economy, to the point where today more than 75 percent of existing jobs, as well as nine of every 10 new jobs, are in the service sector.

Logistics managers grounded in the goods-producing segment of our economy view this dramatic shift in different ways. For a very few—those who either already have begun working for a service company, or are forward thinking enough to see the writing on the wall—the shift represents an entirely new set of opportunities for career advancement.

But the most widespread reaction has been apathy. At the annual conference of the Council of Logistics Management, where there was an entire track of sessions on logistics in the service industry, eyes glazed over when talk turned to the relationship between logistics in manufacturing and logistics in the service-producing arena. "The CLM," deadpans one eyewitness, "was several steps ahead of the membership on this."

The same skills used to manage stocks of widgets can be used to manage a different kind of inventory: say, hospital beds, or the capacity of a fiber optic cable.

Research Results

To help bring logisticians up to speed, CLM last year sponsored a research project to determine the state of logistics in the service industry. The research, conducted jointly by management consultants Arthur D. Little and the Center for Logistics Research at Penn State University, sought answers to a number of basic questions: What is the evolution of the logistics profession going to be and how does it fit into the service sector of the economy? Are the technologies, skills and thought processes used in manufacturing logistics transferrable to the service sector? Are there technologies and practices in the service sector that could be applied in manufacturing?

"One of the things we attempted to do in the research was to build bridges between activities in the service-related arena and the manufacturing-oriented arena," says Carl Evans, group director, logistics & transportation for the Keebler Co. and a member of the CLM's Research Evaluation Committee for the service industry logistics project. Until now, much of the job migration from manufacturing logistics to service industry logistics has taken place in areas closest to the profession: transportation, warehousing and consulting. "Box kickers don't usually get jobs in hotel chains," Evans says. "I think that some of that is marketing. The industry needs to market those opportunities when they become available."

But an even bigger problem may be that logistics managers in goods-producing industries don't recognize that their skills are transferrable to service sector jobs. The same skills, techniques and strategies used to manage inventory—whether it's widgets, watches or whatever—can be used to manage a different kind of inventory: say, hospital beds, or the capacity of a fiber optic cable. Similarly, the analysis necessary to determine the placement of a new distribution center is much the same as that used to pinpoint the best location for a new automated teller machine.

"For the individual practitioner," Evans says, "it requires a leap in logic to say, 'If that's the expanding sector of our economy, how do I translate my skills to that sector?' "

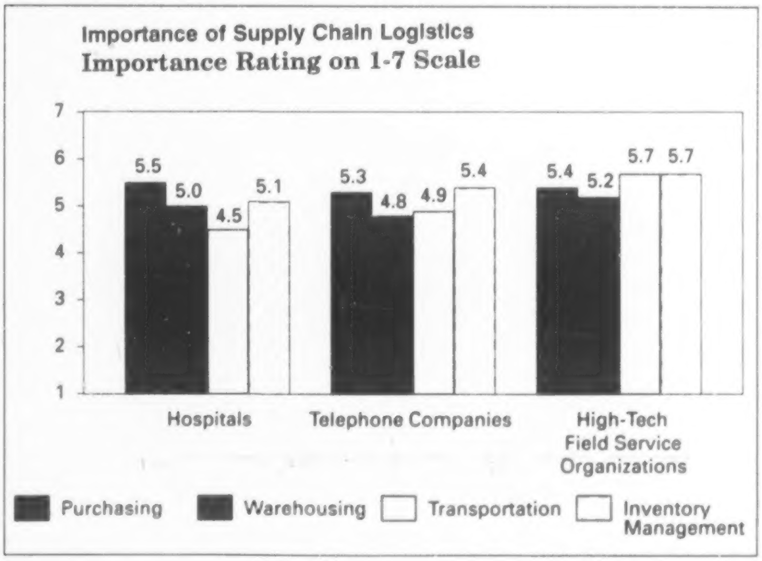
To help make that leap in logic, those who are familiar with the research say, a new, expanded definition of logistics is necessary. "To me, the key point that came out of the study is that we need to think of logistics more broadly than we do now," says William L. "Skip" Grenoble, administrative director of PSU's Center for Logistics

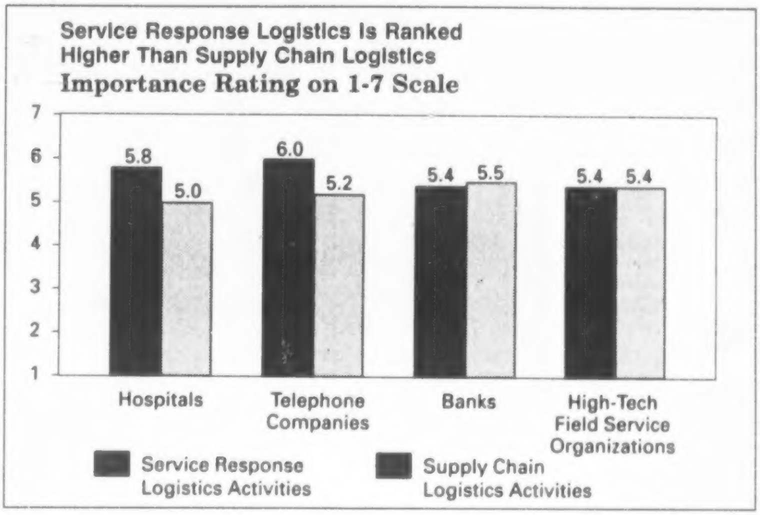
continued

Research. For example, managing inventory—getting the right product to the right place at the right time—has become logistics' mantra in manufacturing industries. In the service industry, however, this narrow focus is replaced with a much wider mission: Getting the right goods *and* the right people *and* the right information to the right place at the right time. To make this easier to grasp, the research divides the definition of logistics into two parts. *Supply chain logistics* is the traditional process associated with the acquisition and distribution of goods. This is where logistics has been all along. *Service response logistics* is the coordinating of all nonmaterial activities necessary to the fulfillment of the service in a cost- and customer service-effective way.

The CLM research project examined the way these two components of logistics are addressed in four service industries: hospitals, banking, telecommunications and high-tech field service. While firms in these industries rarely question the importance of service response aspects of logistics, they are apt to take note of the supply chain functions only when they fail. Stockouts in the operating room or pharmacy of a hospital can have disastrous consequences. If the right wire or cable isn't available to the telephone repairman, it could prevent service from being restored.

Supply chain logistics is most important in high-tech field service, where inventory control and transportation of expensive parts is critical.


Importance of Supply Chain Logistics
Importance Rating on 1-7 Scale


Service Response Logistics Is Ranked Higher Than Supply Chain Logistics
Importance Rating on 1-7 Scale

Most service industries emphasize service response logistics over traditional supply chain functions. These are usually noticed only if they fail.

Also, supply chain activities are rarely part of service firms' marketing mix. For example, banks don't flaunt their check processing prowess, yet they may lose customers if there are excessive errors or delays in this process. An exception here is high-tech field service, where parts availability is a crucial part of marketing success.

There is also a fairly dramatic difference between the cost structures of service-producing and goods-producing organizations. Many costs in the service sector are fixed; labor and capital account for 75 percent of operating costs in most businesses. This raises significantly the value of additional sales, because the marginal cost of providing the additional service is relatively low. For example, adding an additional passenger on a plane has a low marginal cost, but high marginal revenue.

This is the opposite of the way it works in manufacturing, where fixed costs typically account for less than 20 percent of operating costs. In manufacturing, the big bucks are spent on materials and inventories. The value of additional sales in this case is not as great, while the marginal costs of adding the volume can be much higher than for a service business. This is also why service firms must place such a strong emphasis on customer service. Because the incremental cost of servicing an additional customer is so low, the loss of revenue when a customer is lost is more keenly felt.

If there is one thing that sets service industry logistics apart from manufac-

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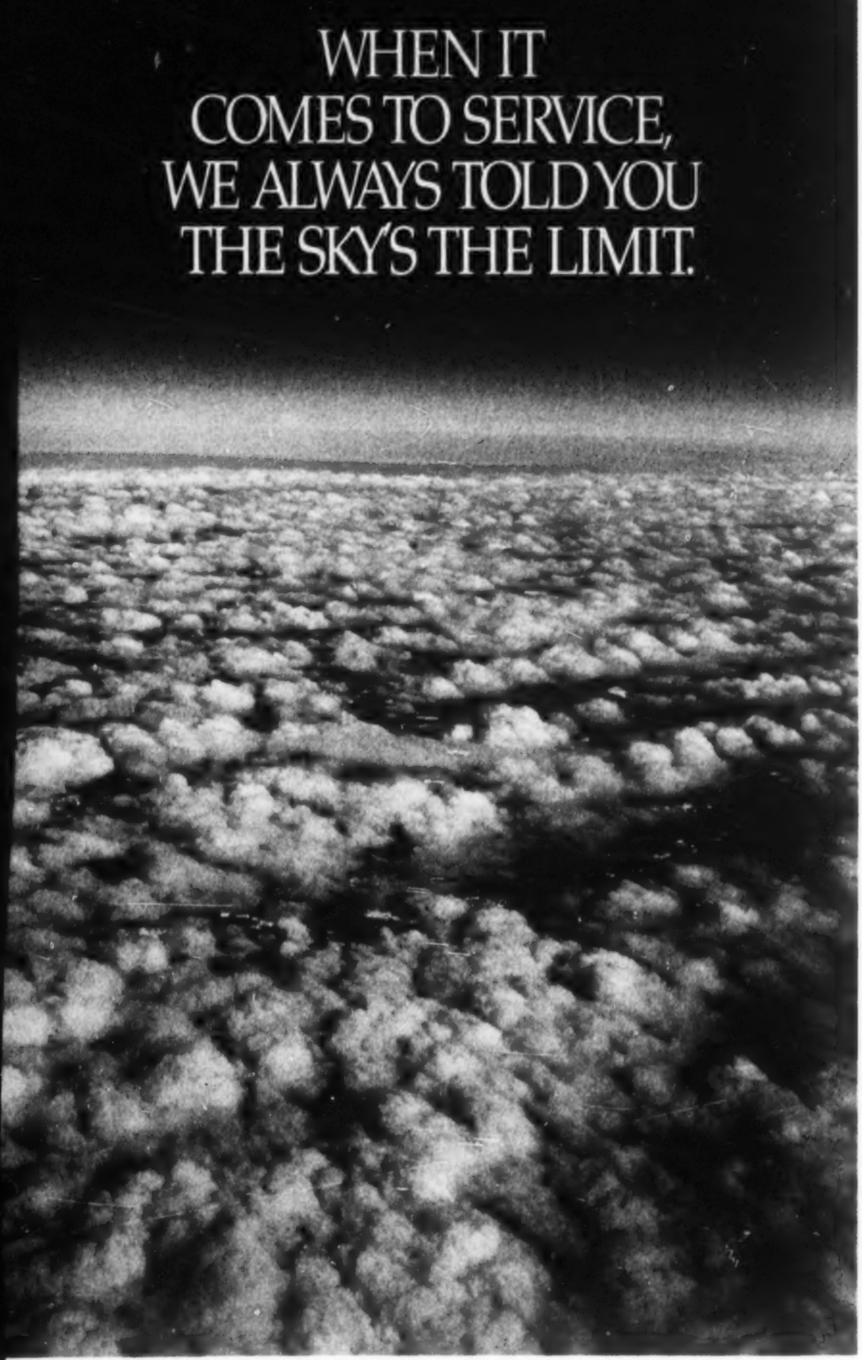


turing logistics, it's that production and consumption are simultaneous – and they almost always happen in front of the customer. This is rarely the case in manufacturing logistics, where a production breakdown can often be overcome by using safety stocks or expedited transportation.

Service response logistics focuses on three main areas:

- **Minimizing wait times.** These are similar to order cycle times in manufacturing logistics. They are a key factor in the quality of service.
- **Managing service capacity.** This is analogous to managing inventory in a goods-producing organization, though there are several important differences. For a manufacturer, inventory acts as a buffer, enabling it to provide product during periods of peak demand without extraordinary effort. Service firms don't have this luxury; if they don't have the capacity in place to meet the demand, they must either forego the business, let service levels slip or expend great effort and resources.

A second difference is that service firms often can change capacity only in fixed amounts. For example, an entire plane and crew must be scheduled between two cities. Manufacturers can usually produce a few more items without dramatically affecting overhead.

- **Providing delivery through distribution channels.** This correlates directly with the distribution channels in manufacturing industries. Like manufacturers, service firms are now experimenting with different distribution channels for their services. These new channels can increase the time that services are available (automated teller machines) or add to customer convenience (walk-in clinics).

The Opportunity is Great

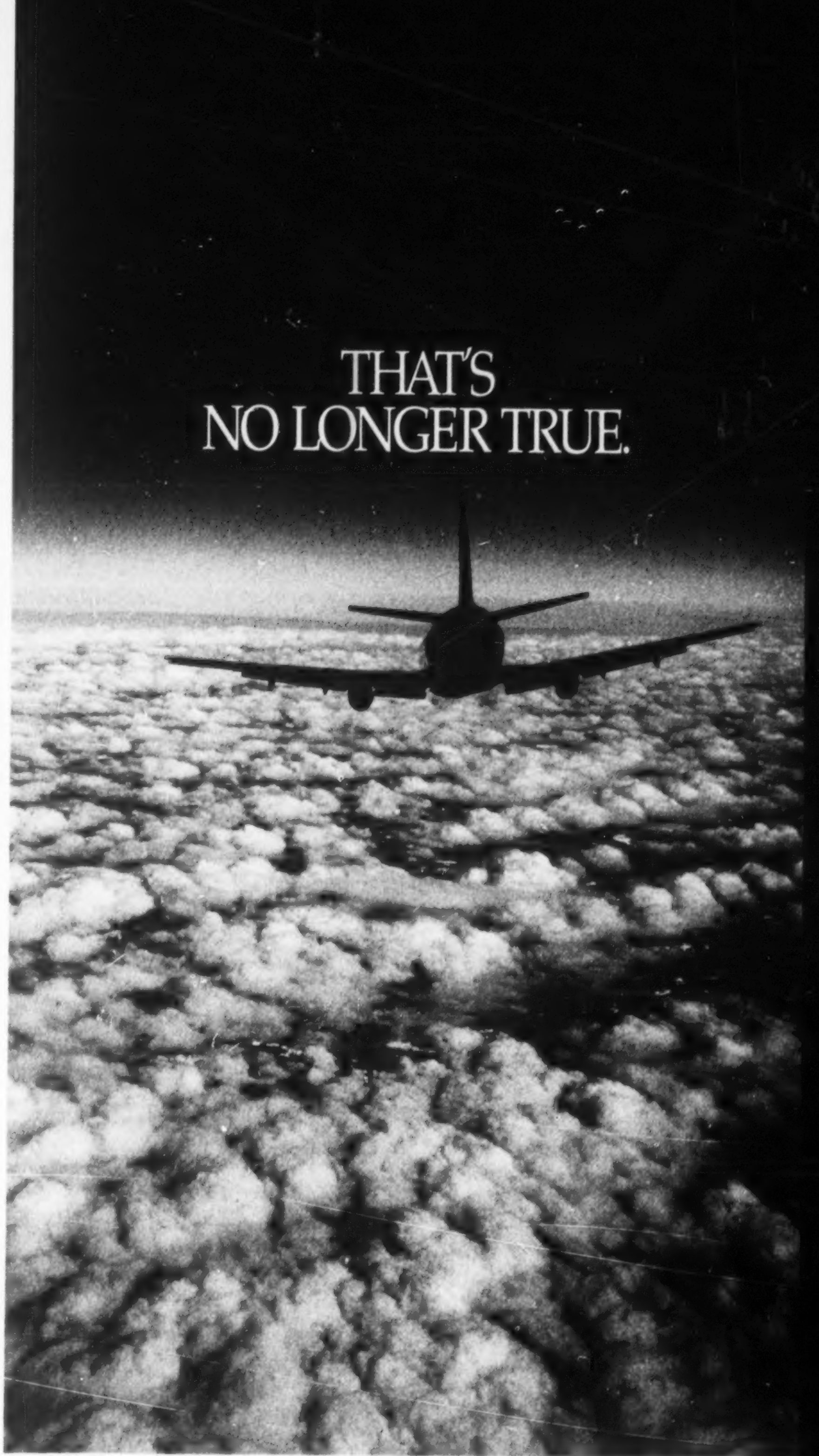
Service industries, naturally, have always placed more emphasis on service response logistics than on supply chain logistics (see charts, p. 28). They have not expended a lot of effort managing supply chain costs such as inventory, transportation and warehousing, mainly because they haven't had to. Until recently, many service industries have been highly regulated, so they could always pass on high supply chain costs to their customers. But now many of these industries are deregulated, and with deregulation comes increased competition—and closer scrutiny of costs. The CLM study places the value of the service economy at $2.9 trillion and points out that 75 percent of operating costs involve logistics processes—about $2 trillion. (This figure is much higher than a comparable percentage for goods-producing businesses because service industries rely so heavily on personnel to accomplish logistics tasks.) If logistics improvements in service industries were to match those in manufacturing over the past 10 years—about 10 percent—these firms could save as much as $200 billion.

This, then, is where traditional, manufacturing-based logistics professionals can make a real impact in a service business. Carl Evans points out that as recently as the mid-1960s, there were relatively few manufacturing companies with their own distribution or logistics departments. But as the function evolved and began contributing to profitability, it attained a higher level of credibility—and stature.

"There is a whole new world out there that we can bring some expertise to," Evans says. "The service industry offers some genuine career opportunities."

At the same time, service firms are typically much further along the service response logistics curve than are managers in goods-producing companies. "What we have to learn from service industries is how they do service response logistics," says Skip Grenoble, "because they do that very well." ■

Copies of the comprehensive report, "Logistics in Service Industries," are available from the Council of Logistics Management. Contact Christa Childs at (708) 574-0985.



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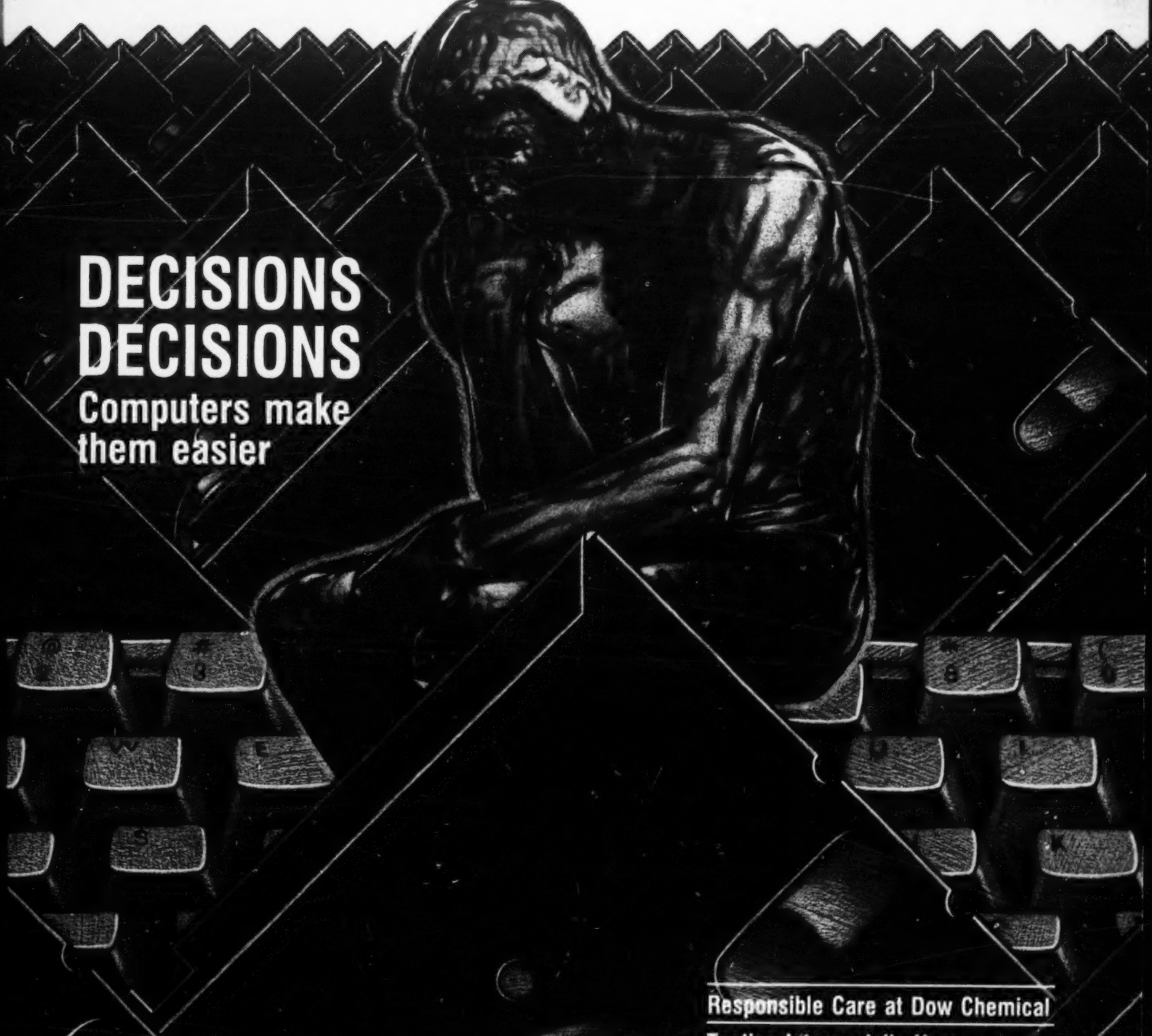
WAREHOUSING
Managing Your Lift Trucks



DECISIONS DECISIONS

Computers make them easier

Responsible Care at Dow Chemical

Tooting Intermodal's Horn

The Basics of SPC

MAY 1992

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THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE

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EDITORIAL STAFF

THOMAS A. FOSTER, ESQ.—Editorial Director
(215) 964-4379
JAY GORDON—Executive Editor
(215) 964-4385
E.J. MULLER—Senior Editor (West Coast)
(415) 769-0884
SHARON STRUCKUS—Senior Associate Editor
(215) 964-4387
EMILY HALL—Production Manager
(215) 964-4384
EDITORIAL FAX #: 215-964-4381

CONTRIBUTING EDITORS

JOSEPH V. BARKS (215) 964-4385
ROBERT J. BOWMAN (415) 752-4884
DR. JOSEPH CAVINATO (814) 863-2054
KURT HOFFMAN (301) 762-8250
STANLEY HOFFMAN (203) 790-4195
RICHARD MALKIN (718) 343-7718
JAMES D. MARTIN (708) 256-8182
ROBERT SELWITZ (212) 877-3414
SY ZIVAN (212) 830-5357

FOREIGN CORRESPONDENTS

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Associate Professor of Business Logistics
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TOOTING INTERMODAL'S HORN

The 1991 Intermodal Index shows that more shippers are trying it despite a continued gap between perceptions of its performance versus truck. The results suggest the industry could do a better job of promoting itself.

By Jay Gordon, Executive Editor

This intermodal industry can be tough to figure.

The gap between shipper perceptions of intermodal service versus that of its truckload competitors actually widened last year. Yet a number of shippers joined the ranks of intermodal users—and existing users said they would divert even more traffic to intermodal.

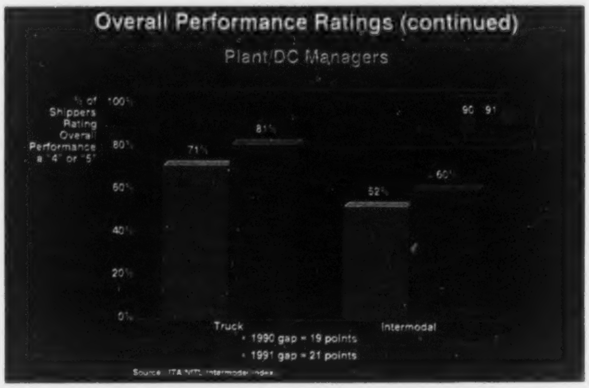
The bad news is that even after years of improved transit times, tighter coordination and improved communication, intermodal skeptics abound. And the industry appears to be doing little to change their minds.

This is the message contained in the 1991 Intermodal Index, the second of five annual surveys that are part of a joint shipper/carrier research effort. Co-sponsored by the National Industrial Transportation League and the Intermodal Association of North America, the surveys are conducted by Mercer Management Consulting. Here are some of the highlights:

- **The Performance Paradox.** The gap in overall performance ratings for intermodal carriers *vis a vis* truckload carriers actually grew last year (see chart at right). The increase may not be statistically significant, but it is noteworthy, if only for the fact that perceptions of intermodal's performance did not *improve*. Intermodal providers and their customers generally agree that transit times have improved, there is tighter coordination of the service and communication among all parties involved is better. When shippers were asked how their perceptions had changed over the past three years, 67 percent said intermodal had improved, compared to 62 percent who said the same of truck service. Among intermodal non-users, however, only 28 percent said intermodal improved; 68 percent said truck improved.

The paradox is that despite the perception gap, 6 percent more shippers used intermodal last year, and 34 percent shifted freight from truck to intermodal. This can be explained in large part by a significant shift in shippers' criteria for choosing intermodal; *price* jumped to third on the list last year, from eighth place in 1990. Clearly, the pressure to cut costs during a recession works in intermodal's favor.

The gap widened last year between shipper perceptions of intermodal vs. truckload service.



- **The Length-of-Haul Factor.** This is another contributor to the perception gap, says Dean Wise, principal of Mercer Management Consulting. Intermodal users rate it as good or better than truck in long hauls. That may not be news; intermodal has always been a weaker competitor on short hauls. The problem is, there's a lot more traffic moving short distances these days. And non-users don't seem to care how far the shipment is moving. "They see the gaps at every length of haul," Wise says.

- **Intermodal Reps Go AWOL.** What non-users *don't* see very often is an intermodal sales rep. The Index shows that 32 percent of non-users have never had a prospecting call from an intermodal sales person. Only 4 percent had never been visited by a TL carrier they weren't currently using.

The intermodal sales effort fared a little better with current users. About 25 percent of the respondents said they had been called on by their intermodal rep within the past week. But 70 percent of TL customers said their rep

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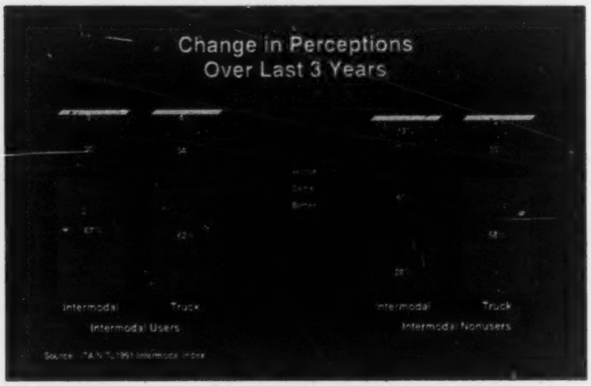


Shippers who've tried it, like it. But non-users are skeptical of the "new & improved" intermodal.

had been in to see them. And 7 percent of intermodal users said they had never had a sales call from their current carrier—compared to just 1 percent who said they'd never been visited by their TL rep.

Wise suggests that railroads and third parties may need to use different channels, like direct marketing, to reach non-users. He also says that more railroads are opting to retail their intermodal service as a premium product at a premium price. "They are trying to develop a brand recognition," he says. He includes in this group services like Conrail's Mercury, Burlington Northern's BN America and Norfolk Southern's Triple Crown.

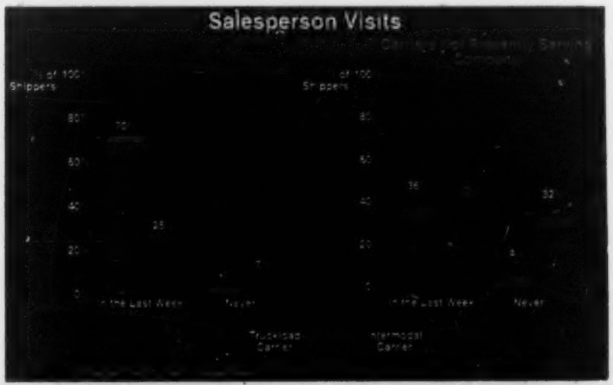
• **The Credibility Push.** The partnerships that are springing up between TL carriers and railroads benefit both parties, and some of the largest and best known carriers in the country, like J.B. Hunt and Schneider National, have led the way. These cooperative efforts are usually born out of a reluctance on the part of drivers to service long-haul markets, where they are away from home for weeks at a time. "Lifestyle is the biggest complaint of truck drivers," Wise says. The fact that these carriers are now turning to the railroads to provide linehaul transportation in some lanes, he adds, provides intermodal with a subtle endorsement. "Some of the third parties have said that services like Quantum are helpful because it has given intermodal some credibility," Wise says.

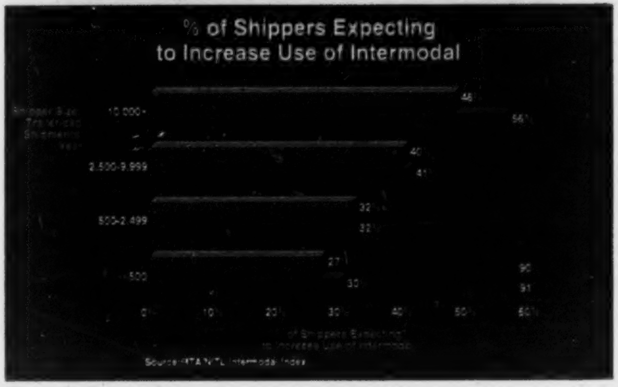
• **The Domino's Principle.** New to this year's survey is a section on enhancements to intermodal service that would induce shippers to use it, and whether they would be willing to pay a premium for those enhancements. Sixty-eight percent of shippers surveyed said they would increase their use of intermodal if 98 percent of the shipments were delivered on the day they're promised; 61 percent said they would be more likely to use intermodal if transit times were one day faster; and 57 percent said that an unconditional service guarantee, with financial penalties for performance failures, would encourage them to try intermodal.

Service guarantees had the highest marks for willingness to pay a premium; 56 percent of shippers said they would pay extra for such an enhancement. Forty-three percent said they'd pay extra for 98 percent on-time performance, and 39 percent said they'd pay a premium for one day faster transit time. The message is clear: shippers will respond to a guarantee as a marketing strategy, and are likely to pay a premium price for it. "We have found through our consulting work that a service guarantee is a powerful thing," Wise says. "It means you're going to put your money where your mouth is." And while the industry may be reluctant to offer such a guarantee, Wise says intermodal carriers and third parties can take their cue from Domino's Pizza, one of the first U.S. companies to demonstrate the dramatic success of this strategy, with its 30-minute delivery promise. The key to Domino's guarantee, Wise says, is that "if they miss the mark, they don't give it all back, they give you $3.

"It all depends on how you structure (the guarantee)," he adds. "It's a good way to get people in." ■

Intermodal needs to pound the pavement. The industry may be missing opportunities by not calling on non-users enough (top). Many never get a visit. Big users will drive intermodal growth (bottom).





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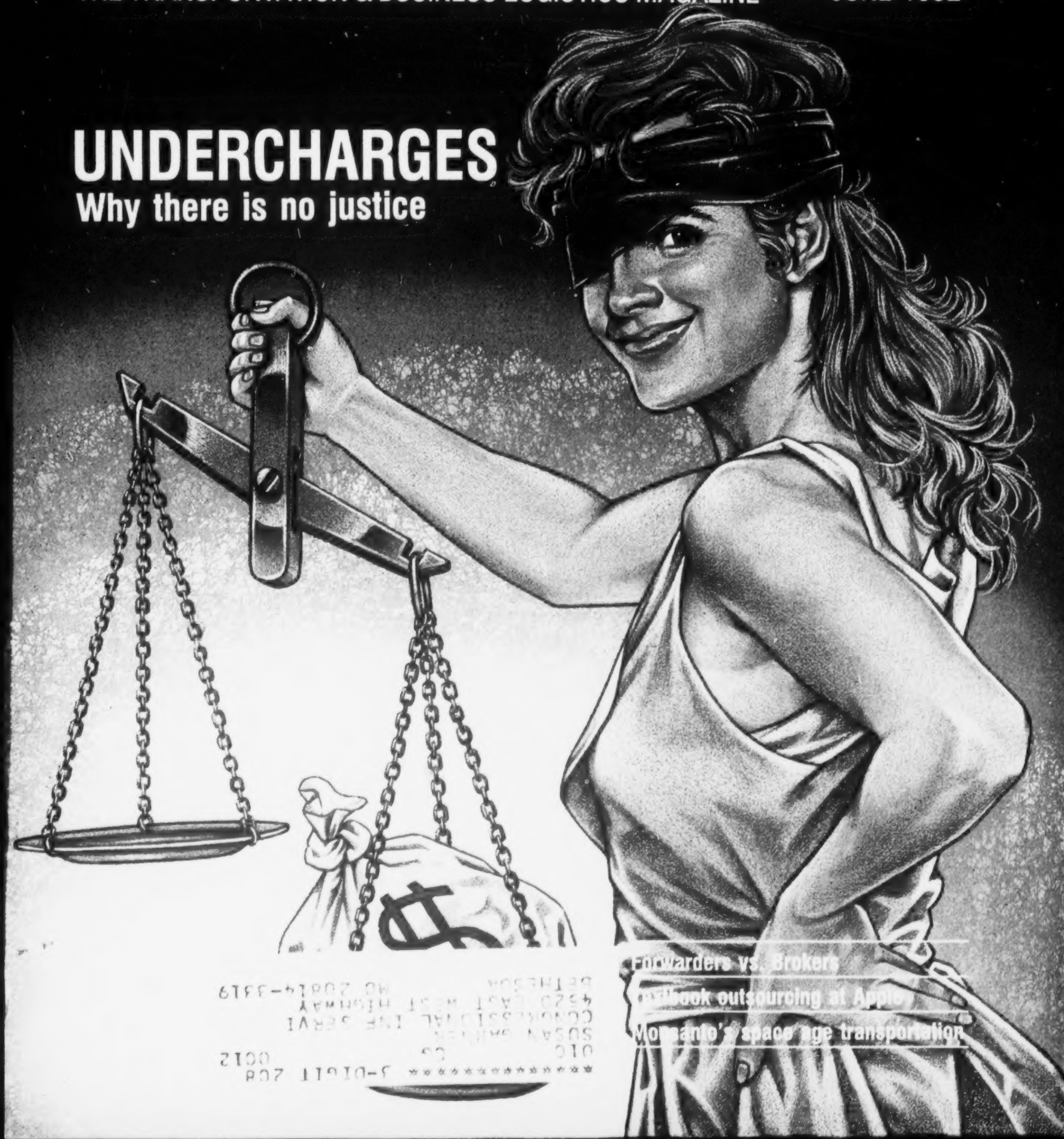

UNDERCHARGES

Why there is no justice

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Forwarders vs. Brokers

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Monsanto's space age transportation

JUNE 1992

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To many shippers, justice appears to be truly blind when it comes to the multi-billion dollar undercharge problem. Why? The answer is simple: Too many people are making huge amounts of money from this crisis, and shippers are spending far less to get the problem fixed than those who have a vested interest in seeing the gravy train roll on.

FEATURES

38 FORWARDERS VS. BROKERS

Distinctions are so blurred between these two entities that some shippers may not know who they're really dealing with when they tender a shipment. Read on to learn when a forwarder isn't a forwarder, and why a broker may be hard to locate when you file a claim.

44 EXPLORING THE OUTSOURCING FRONTIER

Apple, the innovative computer maker, takes an equally innovative approach to customer service – turning all domestic distribution over to a sole-source logistics provider.

51 TRACKING THE HAZMAT EXPRESS

Monsanto Chemical and Bee Line Trucking have teamed up to move a hazardous material across the U.S. in specially designed vehicles that are tracked every mile of the way by satellite. Drivers use on-board computers to contact home base.

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EDITORIAL STAFF

THOMAS A. FOSTER, ESQ. – Editorial Director
(215) 964-4379

JAY GORDON – Executive Editor
(215) 964-4385

E.J. MULLER – Senior Editor (West Coast)
(415) 769-0884

SHARON STRUCKUS – Senior Associate Editor
(215) 964-4387

EMILY HALL – Production Manager
(215) 964-4384

EDITORIAL FAX #: 215-964-4381

CONTRIBUTING EDITORS

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SY ZIVAN (212) 830-5357

FOREIGN CORRESPONDENTS

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EDITORIAL ADVISORY BOARD

DR. JOSEPH L. CAVINATO
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Professor of Marketing
Temple University

CHARLES E. MARR
Logistics Engineering Manager
Hewlett Packard

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Trucking

ICC UNDERSCORES ITS DEFINITION OF INTERSTATE TRAFFIC

Philbin: ICC knows interstate

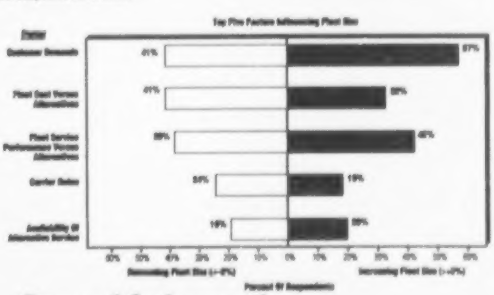
The Interstate Commerce Commission says it knows interstate traffic when it sees it, and it will no longer tolerate interference from state regulatory agencies jealously claiming jurisdiction over every movement within their boundaries. This most recent squabble was triggered by a petition from the Association of Texas Warehousemen and seven individual Texas warehouses who were threatened with prosecution by the Texas Railroad Commission for handling certain shipments to points within Texas as interstate traffic. The ICC ruled that goods transported into Texas and temporarily stored in public warehouses before shipment to other points in Texas are not subject to state economic regulation. The Texas warehouses stand to save between $21 million and $27 million per year by using interstate rates.

The ICC also issued a policy statement regarding the interstate vs. intrastate question. The statement reiterates the Commission's long-standing definition of interstate traffic moving within a state's boundaries: Whether the shipper has the fixed and persistent intent to have the shipment continue in interstate commerce to its ultimate destination. "If this intent is present, the interstate character of the traffic is not changed simply because the merchandise may move through a warehouse or terminal on the way to its ultimate destination," the ICC states.

The ICC said it would consider the following factors in determining whether or not the intrastate carriage is part of a continuing movement in interstate commerce:

- The shipper, whether or not it knows the ultimate destination of specific shipments, bases its interstate intention on the total volume to be shipped through the warehouse based on projections of customer demand. These can include historic sales in the state, actual recent orders and relevant market surveys of need. Merely planning to solicit future sales within a state doesn't count.
- No processing or product modification occurs at the warehouse, though repacking or reconfiguring may be performed.
- While in the warehouse, the merchandise is subject to the shipper's control.
- The shippper or consignee must ultimately pay for transportation charges even if the warehouse directly pays the carrier.

SERVICE, RATHER THAN COST, DRIVES PRIVATE FLEET DECISIONS



Demand fuels growth

U.S. private fleets continue to grow, despite shippers' increased use of dedicated contract carriers and leasing companies to reduce asset investment. According to an A.T. Kearney study for the National Private Truck Council, the nation's private fleets will grow 15 percent between 1988 and 1994. The primary factor driving this growth is customer demand; 92 percent of the 251 respondents said their fleet's role is primarily to improve service reliability. The other two big reasons for having a fleet: responsiveness to short order cycle times and maintaining direct customer contact.

"Most fleets are recognizing the importance of customer service," says Michael Lipman, the principal at A.T. Kearney who conducted the NPTC study. "They are actively pursuing continuous improvement, and they are making progress in their costs, productivity and performance compared to 1985." For example, the survey reports that the average cost per mile for private tractor trailer fleets in 1991 was $1.43, compared to $1.47 in 1985, adjusted for inflation. However, costs for the alternatives to private fleets, such as contract carriage, have also gone down in recent years. Survey respondents who reported shrinking fleets (a decrease of more than 40 percent) said the lower cost of these alternatives was a key factor.

warehousemen could settle for 5 percent. LTL shippers could opt to pay the difference between their negotiated discount and the average prevailing discount that year, estimated to be 10-20 percent of the claim.

The collection interests have other ideas.

"We want to make a deal with shippers," says Joseph Steinfeld, a leading attorney for the collection interests. "We have proposed legislation that would end all of this litigation, but shipper representatives—specifically Bill Augello—refuse to compromise."

This legislation was drafted jointly by the collection agents, the Teamsters and apparently the Regular Common Carrier Conference. The main claims settlement terms are as follows:

For negotiated rate claims that shippers litigate and lose, they would pay an additional 40 percent of the amount originally billed up to 75 percent of the undercharge claim. Shippers that waive all defenses and settle would get a 25 percent reduction. Shippers would not be able to use the rate reasonableness defense under the main bill. For claims based on *Trancon*-type discounts, shippers would pay 15 percent of the claims. The legislation also includes significant reregulatory measures (See *The Teamster Bill is a Time Bomb*, p. 4.).

"This legislation is not a compromise," argues Augello. "For *Transcon*-type cases alone, claims right now are at least $3 billion. They want shippers to immediately pay them $450 million. No thanks."

Because CURB and the collection interests have been unable to reach a compromise, Chairman Mineta and his subcommittee are drafting legislation, which at least can serve a starting point for Congressional mark up.

Stan Sender, legal counsel and lobbiest for CURB is optimistic that the mark up process can produce a bill acceptable to shippers.

"The political momentum is changing," says Sender. "With 340,000 shippers being sued by Transcon and thousands more by P-I-E, the undercharge problem suddenly has high visibility on Capitol Hill. Even pro-labor congressmen have to listen to shippers now. I think we have a chance at a good undercharge bill."

According to Augello, if a satisfactory bill is not passed this term, no further efforts will be made by CURB for an undercharge relief bill. "We will pursue our legal remedies in the courts and at the ICC where we are winning the great majority of cases. We will also mobilize the shipping community for complete trucking deregulation." ■

continued

A PAC OF TROUBLE FOR SHIPPERS

The Teamsters have always been among the largest, and certainly the shrewdest, users of political action committee (PAC) money to influence legislation. The record shows that they have been especially effective in influencing congressmen involved with undercharge legislation.

DISTRIBUTION researched the filings for 29 PACs affiliated with the Teamsters reporting to the Federal Election Commission for the 100th Congress (1987-88), 101st Congress (1989-90) and 102nd Congress (1991-92). FEC records show that the vast majority of the contributions stem from a PAC called DRIVE, which has contributed $6,261,489 to U.S. Congressmen and Senators between 1987 and March of this year. Contributions from other Teamster-related PACs adds to this figure. (See chart on page 34.)

Among the top 10 recipients of Teamster PAC money have been Glenn Anderson ($27,500), Robert Roe ($27,500) and Norman Mineta ($27,500). Anderson was Chairman of the House Committee on Public Works and Transportation in the 101st and 102nd Congress. Roe now holds this position. Norman Mineta has been on this committee in all three Congresses, and is now Chairman of the Transportation Subcommitttee. James Exon, Chairman of the Senate Surface Transportation Committee and drafter of a pro-Teamster version of an undercharge bill, received $10,000 in the 101st Congress.

The fingerprints of Teamster PAC money also show up on the two unsuccessful attempts to pass undercharge relief legislation in the 101st Congresses. In 1990, shippers pushed to have a bill introduced that would have overturned *Maislin* in that it would have allowed the ICC to find it an unreasonable practice to negotiate a rate lower than its tariff rate. Both Chairmen Anderson and Mineta refused to mark up the bill because of Teamster opposition. A similar Senate bill progressed through the Commerce Committee, but at the last minute, was killed in the Judiciary Committee. At this same time, key members of this committee received large contributions from DRIVE. Chairman Joe Biden (D-DE), Howell Heflin (D-AL) and Arlen Specter (R-PA) each received $10,000. Paul Simon (D-IL) received $20,000, Ted Kennedy (D-MA) received $7,500 and Howard Metzenbaum (D-OH) received $5,200.

CONGRESSMEN ON THE TAKE

Top 80 Recipients of Teamster PAC Money Since 1987

Congressman	Party/State	Total
Alexander, W	D-AR	$20,000
Anderson, G	D-CA	$22,500
Annunzio, F	D-IL	$20,000
Bilbray, J	D-NV	$20,000
Bonier, D	D-MI	$25,000
Boxer, B	D-CA	$25,000
Brown, G	D-CA	$27,500
Campbell, B	D-CO	$22,500
Carr, B	D-MI	$20,000
Clarke, J	D-NC	$20,000
Clement, R	D-IN	$30,000
Collins, C	D-IL	$22,500
Costello, J	D-IL	$27,500
Dingell, J	D-MI	$25,000
Durenberger,D	D-MN (Sen.)	$20,000
Durbin, R	D-IL	$21,000
Dymally, M	D-CA	$25,000
Evans, L	D-IL	$20,000
Feighan, E	D-OH	$22,000
Foglietta, T	D-PA	$20,000
Ford, H	D-TN	$22,000
Ford, W	D-MI	$20,100
Frost, M	D-TX	$19,500
Gephardt, R	D-MO	$35,000
Harris, , C	D-AL	$25,000
Hayes, C	D-IL	$25,000
Hertel, D	D-MI	$26,000
Hoagland, P	D-NE	$25,000
Johnson, T	D-SD	$27,500
Johnson, H	D-FL	$22,500
Jones, B	D-GA	$20,000
Jontz, J	D-IN	$25,000
Kastenmeier, R	D-WI	$20,000
Kildee, D	D-MI	$22,000
Kleczka, G	D-WI	$22,800
Kopetski, M	D-OR	$25,000
Lewis, J	D-GA	$25,000
Lipinski, W	D-TN	$26,000
Lloyd, M	D-TN	$25,000
Long, J	D-IN	$39,750

Congressman	Party/State	Total
Manton, T	D-NY	$22,500
Martinez, M	D-CA	$22,500
Mavroules, N	D-MA	$21,000
McCloskey, F	D-IN	$25,000
McMillen, C	D-MD	$24,950
Miller, G	D-CA	$25,000
Mineta, N	D-CA	$27,500
Murtha, J	D-PA	$25,000
Oberstar, J	D-MN	$22,900
Obey, D	D-WI	$22,500
Owens, M	D-NY	$20,000
Owens, W	D-UT	$25,000
Pallone, F	D-NJ	$25,000
Payne, D	D-NJ	$21,500
Pelosi, N	D-CA	$22,500
Perkins, C	D-KY	$25,000
Peterson, C	D-MN	$29,800
Peterson, D	D-FL	$22,500
Rahall, N	D-WV	$22,500
Roe, R	D-NJ	$27,500
Sangmeiser, G	D-IL	$20,000
Sarpalious, W	D-TX	$25,000
Sharp, P	D-IN	$20,000
Simon, P	D-IL (Sen.)	$20,000
Stallings, R	D-ID	$21,000
Studds, G	D-MA	$25,000
Swift, A	D-WA	$24,500
Tabor, E	D-IA	$20,000
Torricelli, R	D-NJ	$22,500
Traxler, B	D-MI	$22,500
Unsoeld, J	D-WA	$25,000
Visclosky, P	DIN	$27,500
Volkmer, H	D-MO	$21,500
Washington, C	D-TX	$20,000
Wheat, A	D-MO	$20,500
Williams, P	D-MT	$27,500
Wise, R	D-WV	$22,500
Wolpe, H	D-MI	$27,500
Worley, D	D-GA	$20,000
Young, D	R-AK	$23,500

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EDITORIAL STAFF

Thomas A. Foster, Esq.
Editorial Director
(215) 964-4379

Jay B. Gordon
Executive Editor
(215) 964-4385

E.J. Muller
Senior Editor (West Coast)
(415) 769-0884

Sharon Struckus
Sr. Associate Editor
(215) 964-4387

Emily Hall
Production Manager
(215) 964-4384

John G. Capers III
Publisher
(215) 964-4389

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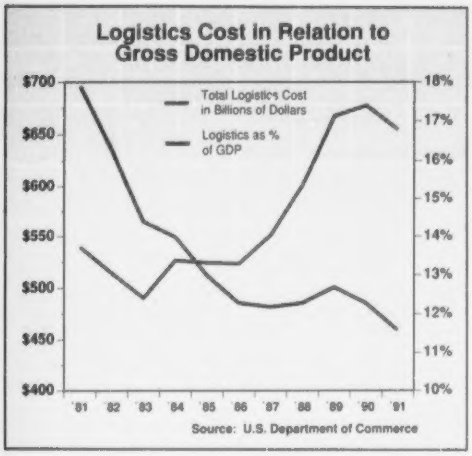


Logistics costs for 1991 enjoyed their biggest drop in recent history.

In a Difficult Year, Logistics Shines

After a five-year productivity drought, logistics kicks in with some eye-popping improvements. The key was our ability to manage inventories.

By Thomas A. Foster, Editorial Director

No matter how you measure it, the logistics industry in 1991 performed brilliantly during a very difficult year.

After a five-year plateau, logistics operating costs in 1991 were actually lower than in 1990. The real cost of the physical distribution system dropped $13 billion, from the 1990 level of $600 billion to $587 billion last year. The real cost across the entire logistics supply chain dropped $23 billion, from a 1990 level of $678 billion to $655 billion in 1991.

Cass Logistics' Executive Vice President Robert Delaney has been tracking such costs for more than 20 years, and he says this turnaround is nothing short of amazing. He attributes the savings to lower investment in inventory, declining interest rates and tight control over transportation costs. He suggests the savings may even be $2 billion to $3 billion higher. "We will know when the Eno Foundation publishes actual transportation costs for 1991," he says.

This year, Delaney enhanced his compilation of statistics with two sets of costs numbers: one for the physical distribution system and one for the logistics supply chain system.

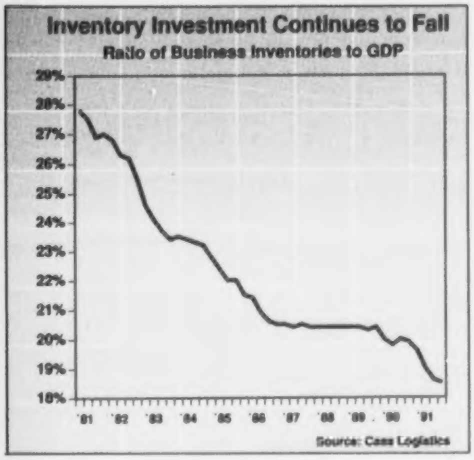
The numbers in the physical

continued

U.S. LOGISTICS COSTS
($ Billion except GDP)

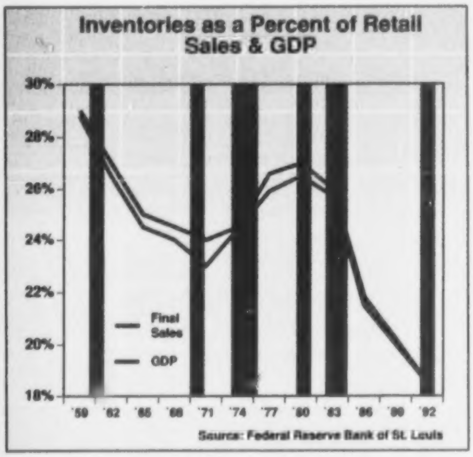
Year	GDP $ Trillion	Value of Business Inventory	Inventory Carrying Rate	Inventory Carrying Costs	Transportation Costs	Administrative Costs	Total U.S. Logistics Costs	Logistics % of GDP
1972	1.206	285	.250	71	97	7	175	14.5
1973	1.349	339	.272	92	108	8	208	15.4
1974	1.458	410	.290	119	116	9	244	16.7
1975	1.585	433	.253	110	116	9	235	14.8
1976	1.767	462	.250	116	133	10	259	14.6
1977	1.974	504	.250	126	150	11	287	14.5
1978	2.232	574	.270	155	175	13	343	15.4
1979	2.488	665	.300	200	193	16	409	16.4
1980	2.708	765	.317	243	205	18	466	17.2
1981	3.031	826	.343	283	236	21	540	17.9
1982	3.150	824	.309	255	240	20	515	16.3
1983	3.405	817	.279	228	244	19	491	14.4
1984	3.777	882	.291	257	250	20	527	14.0
1985	4.038	896	.268	240	265	20	525	13.0
1986	4.269	893	.261	233	271	20	524	12.3
1987	4.540	923	.263	243	288	21	552	12.2
1988	4.900	996	.267	266	313	23	602	12.3
1989	5.244	1066	.292	311	331	26	668	12.7
1990	5.514	1099	.272	298	354	26	678	12.3
1991	5.673	1080	.250	270	360	25	655	11.6

Source: Survey of Current Business; U.S. Statistical Abstract; U.S. Department of Commerce


Inventory Investment Continues to Fall
Ratio of Business Inventories to GDP

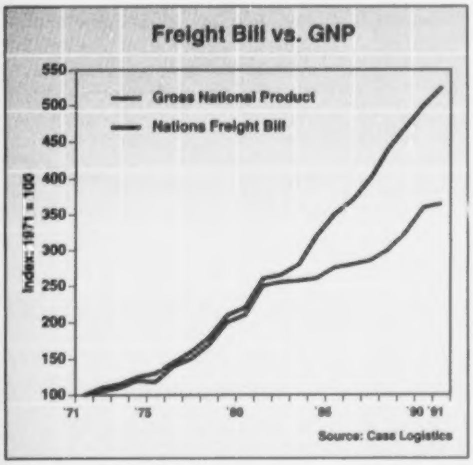
Source: Cass Logistics

Current inventory investment is $200 billion below 1981 levels.


Inventories as a Percent of Retail Sales & GDP

Source: Federal Reserve Bank of St. Louis

Improved logistics has allowed for lower inventories during the current recession.


Freight Bill vs. GNP

Source: Cass Logistics

Transportation was only 6.3 percent of 1991 GDP—a 0.5 point drop.

distribution series include the costs for manufacturing, wholesale and trade inventory management, as well as the cost of transportation and administration. These physical distribution costs are compared to gross national product, the traditional measuring stick of our entire economy.

Starting this year, Delaney is also presenting a series of figures for what he calls the logistics supply chain. It includes the cost of *all* business inventory, including agriculture, mining, construction and service industries, in addition to manufacturing, wholesale and retail trade. Transportation and administration costs are also included. These costs are compared to gross domestic product, the economic measure now preferred by the U.S. Department of Commerce. Cass Logistics will maintain both sets of data.

Delaney says changes in logistics mandate changes in the way he compiles logistics statistics. "For more than 20 years our profession was known as physical distribution management," he says. "Our responsibility began at the end of the production line and included the management of transportation, warehousing and customer service."

The profession changed considerably during the decade of the 1980s. "Partial deregulation of surface transportation, the power of the personal computer and breakthroughs in communications enabled us to integrate our operation to a far greater degree than before," Delaney says. "In 1986, the NCPDM was renamed the Council of Logistics Management, and the scope of logistics was expanded to include the management of raw materials." Now, more and more of Cass's clients are adopting integrated logistics supply chain management. "For example, Libby Owens Ford manages the procurement of dolomite, soda ash, silica sand and hycalcium inbound in the same organization that manages finished product logistics," he says.

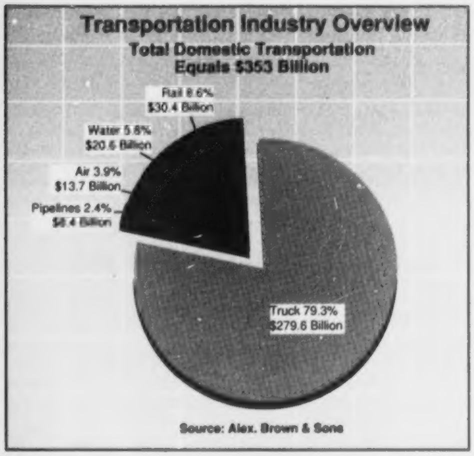
The government has also changed its scope. In early 1992, the Department of Commerce made significant

continued

COMPONENTS OF 1991 PHYSICAL DISTRIBUTION AND LOGISTICS COSTS
($ Billions)

		Physical Distribution System	Logistics System
Carrying Costs-Manufacturing & Trade Inventory			
Interest		$49	$65
Taxes, Obsolesence, Depreciation		97	144
Warehousing		68	61
	Subtotal	**204**	**270**
Transportation Costs			
Motor Carriers			
Public and For Hire		79	79
Private and For Own Account		89	89
Local Freight Services		110	110
	Subtotal	**278**	**278**
Other Carriers			
Railroads		31	31
Water Carriers		22	22
Oil Pipelines		9	9
Air Carriers		14	14
Forwarders		2	2
	Subtotal	**78**	**78**
Shipper Related Costs		4	4
Distribution Administration		23	23
	TOTAL PD/LOGISTICS COSTS	**$587**	**$655**

Source: Robert Delaney, Cass Logistics



Source: Alex. Brown & Sons

In 1990, total domestic transportation costs were almost $354 billion. 1991 figures are not yet in.

PHYSICAL DISTRIBUTION & LOGISTICS COSTS

Relation to the Economy

Years	PD Costs/ GNP	Logistics Supply Chain/GDP
1978-1980	14.00%	16.30%
1988-1990	11.00%	12.40%
1991	10.30%	11.60%

Source: Robert Delaney, Cass Logistics

revisions to national income and product accounts, and adopted the use of Gross Domestic Product to measure economic activity.

Even more important than the way these figures are compiled is the fact that logistics performance is again improving, bringing benefits to the entire economy. Since 1978, the relative cost of the physical distribution system has declined by 3 points of GNP. The relative cost of the entire logistics supply chain declined by nearly 4 points of GDP.

"By either measure, we are talking about major improvements in productivity," says Delaney. "After adjusting for inflation and interest rates, it is conservative to say that productivity has improved by $100 billion over this period."

Delaney's research shows a direct relationship between logistics performance and producer and consumer prices. For example, the Commerce Department index for finished goods producer prices inflated more than six percent between 1973 and 1981. Likewise, logistics costs inflated during this time due to economic regulation and overcapacity.

Partial deregulation kicked in during 1982. It stimulated competition and caused a shakeout of overcapacity in our logistics system between 1982 and 1987.

"We had real distribution cost reductions of $65 billion during that five-year period," Delaney says. "During this same five-year period the producer price index inflated only 1.2 percent. Obviously, there is a connection."

Logistics and distribution productivity plateaued between 1987 and 1990 while the producer price index increased by five percent. "Policies and programs that encourage logistics productivity reduce inflation," says Delaney.

A Key Ratio: Inventory

The main focus of Delaney's research is on inventory. "After all, inventory is the primary responsibility of logistics managers," he says.

One of the key ratios Delaney watches to judge the effectiveness of inventory management by logistics professionals is the inventory-to-gross domestic product ratio.

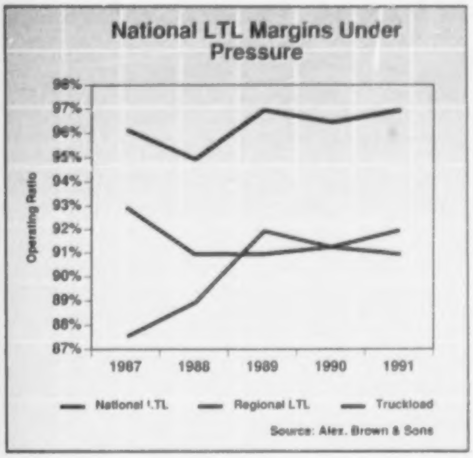
This ratio peaked to 29 percent during the recession of 1974-1975 and again in 1980. Delaney says most economists assume inventories will rise in recessions because sales fall faster than manufacturers can control their production.

But inventory declined during the 1981-82 recession and declined again in the current recession of 1990-91. The average investment in inventory declined month over month through most of 1991. "The reductions in inventory during the 1981-82 and 1990-91 downturns never happened before in our economy," says Delaney.

The reason inventory has fallenin the last two recessions? Better logistics management. "Our transportation industry has become more efficient, more reliable and much more service-intensive," says Delaney. "That has enabled logistics managers to invest in less inventory and hold it in fewer locations. In addition to more efficient delivery, the systems that are employed to forecast inventory are far more powerful. The communications links between manufacturers, wholesalers and retailers enable rapid replenishment."

Delaney attributes a good deal of the savings in logistics costs and improved logistics capability to partial transportation deregulation. He is especially eager to point out that deregulation has benefitted all shippers—large and small.

He examined the freight discounts received by Cass Logistics' 25 largest and 25 smallest shipper clients. He defined large shippers as those with freight costs of $10 million to $150 million, and small shippers as those with costs of under $1 million. Delaney says he reviewed the pricing for the Big Three LTL carriers and found that large shippers have discounts about 10 percent greater than small shippers. "That relationship is both fair and reasonable considering the economies of scale and competitive conditions," says Delaney. "Small shippers never had rates this favorable compared to big shippers prior to 1980. Competition is, and always will be, the best regulator." ■



Source: Alex. Brown & Sons

With margins eroding, LTL carriers will be hard pressed to replenish assets.

Rough Going For LTL Carriers

Revenue was flat, profits down for this segment. But carriers are optimistic that if rates continue to firm, and tonnage improves, they can do an about-face in 1992.

By Thomas A. Foster, Editorial Director

With the recession in full swing at the beginning of 1991, everyone expected LTL carriers to make a poor showing. They probably did not expect these carriers to have their worst year since the last recession ended in 1982.

But that is what happened, according to financial data DISTRIBUTION tracks for the nation's 42 largest LTL carriers, which account for $15 billion of the total $18 billion in U.S. LTL revenue.

Revenue for these carriers climbed a meager 2.83 percent, but profitability dropped significantly. Operating ratios for the group rose an average of 1.5 points. More significantly, the industry's net income went from $423 million in 1990 to an anemic $237 million in 1991.

continued

NATIONAL LTL CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Revenue	1990 Revenue	% Change	1991 NI	1990 NI	% Change	1991 OR	1990 OR	Change
1.	Yellow Freight	$2,323.29	$2,278.54	+1.96	$8.80	$110.15	-92.01	98.9	94.5	-4.4
2.	CF MotorFreight	2,045.25	2,080.78	-1.71	18.74	53.27	-64.82	97.7	95.2	-2.5
3.	Roadway Express	2,041.31	1,965.20	+3.87	64.32	58.69	+9.59	98.9	94.1	-4.8
4.	Overnite Transportation	799.77	801.83	-0.26	33.46	54.54	-38.65	95.0	90.6	-4.4
5.	ABF Freight System	783.02	750.89	+4.28	(2.95)	1.10	NM	96.3	95.1	-1.2
6.	Carolina Freight Carriers	583.59	572.22	+1.99	0.65	0.84	-22.62	98.6	98.4	-0.2
	Totals or Averages	$8,576.23	$8,449.46	+1.50	$123.02	$278.59	-55.84	97.6	94.7	-2.9

Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC

INTERREGIONAL LTL CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Revenue	1990 Revenue	% Change	1991 NI	1990 NI	% Change	1991 OR	1990 OR	Change
1.	Conway Transportation	$534.50	$484.84	+10.24	$23.13	$29.93	-22.72	92.4	88.8	-3.6
2.	Preston Trucking	414.14	404.56	+2.37	(5.95)	0.77	NM	100.8	98.6	-2.2
3.	Central Transport	302.07	265.26	+13.88	1.70	(0.72)	NM	98.2	99.6	+1.4
4.	Watkins Motor Lines	269.05	248.03	+8.47	6.30	6.30	0	94.3	93.8	-0.5
5.	NW Transport	258.84	223.05	+16.05	6.40	11.58	-44.73	94.8	92.0	-2.8
6.	Churchill Truck Line	164.99	161.00	+2.48	(0.65)	2.35	NM	100.6	98.0	-2.6
7.	Old Dominion Freight Lines	155.86	147.32	+5.80	0.16	4.38	-96.35	91.5	92.6	+1.1
8.	FFE Transportation	139.93	130.91	+6.89	5.35	1.44	+271.53	94.2	97.9	+3.7
9.	ANR Freight System	123.44	169.03	-26.97	(25.15)	(50.74)	NM	125.3	140.9	+15.6
	Totals or Averages	$2,362.82	$2,234.00	+5.77	$11.29	$5.29	+113.42	99.1	100.2	+1.1

Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC

The six national carriers increased revenues by 1.5 percent, but they also saw an erosion of operating margins to just 2.3 percent. Net income dropped by more than half.

Regional carriers enjoyed slightly better revenue growth of 4 percent. Certain areas of the country, especially the Northeast, experienced much worse results. Revenues in the Northeast barely moved up, while operating ratios rose by an average of 1.8 percent and net income fell for most carriers. All but one carrier in the region suffered a decline in net income or a loss causing a year-to-year swing of $17 million.

Regional carriers in the Midwest experienced the largest percentage increase in revenue of 10.21 percent. However their net income dropped nearly 17 percent and operating ratios rose an average of 1.7 points.

In the West, revenue increased a modest 3.04 percent. Net income was down over 8 percent and operating ratios rose 2.3 points. Margins in the West, however, averaged 5.3 percent, which was the best profit performance among all the LTL regions. In the South and South Central U.S., revenues climbed less than 3 percent. Net income fell by nearly 40 percent and operating ratios went up 1.7 percent.

DISTRIBUTION groups more than a dozen large, but non-national LTL carriers with substantial operations in more than one region as inter-regionals. Performance among this diverse group varied widely, but average revenue growth was more than 5 percent. This inter-regional group was the only one to see an increase in net income and operating income.

As disappointing as 1991 was for the LTL industry, it could have been much worse. Stephen Klein, of Standard & Poor's, says the LTL industry emerged from the latest recession relatively unscathed compared with

continued

NORTHEAST/MIDDLE ATLANTIC LTL CARRIERS – 1991 vs. 1990
(Millions of Dollars)

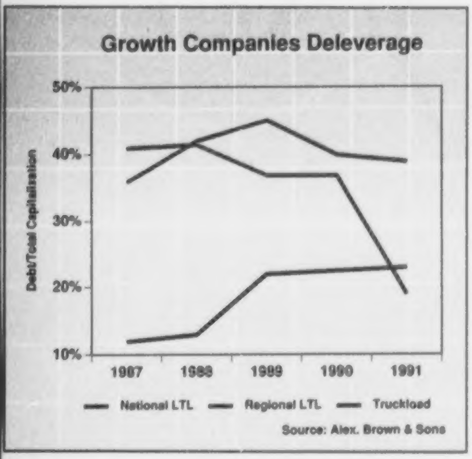
Rank	Carrier	1991 Revenue	1990 Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	St. Johnsbury Trucking	$304.72	$331.88	-8.18	($6.58)	$5.44	NM	100.5	95.1	-5.4
2.	TNT Red Star Express	170.56	158.87	+7.36	(0.28)	2.12	NM	100.1	97.4	-2.7
3.	APA Transport	138.00	142.11	-2.89	5.84	8.60	-32.09	94.4	92.3	-2.1
4.	New Penn Motor Express	129.62	125.03	+3.67	20.54	19.21	+6.92	79.7	79.3	-0.4
5.	Estes Express Lines	111.66	96.86	+15.28	10.59	9.78	+8.28	84.8	84.1	-0.7
6.	Wilson Trucking	59.03	59.63	-1.01	2.02	2.76	-26.81	95.0	92.8	-2.2
7.	New England Motor Freight	60.03	58.86	+1.99	NA	1.80	NM	98.5	96.9	-1.6
8.	Pitt-Ohio Express	45.13	36.41	+23.95	7.73	6.29	+22.94	82.8	82.7	-0.11
9.	CBL Trucking	30.57	30.00	+1.91	(0.09)	0.23	NM	99.1	98.1	-1.01
	Totals or Averages	$1,049.32	$1,039.65	+0.93	39.77)	$56.23	-29.27	92.8	91.0	-1.8

Key: NI = net income; OR = operating ratio; NM = not meaningful; NA = not available
Source: ICC

MIDWEST LTL CARRIERS – 1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Revenue	1990 Revenue	% Change	1991 NI	1990 NI	% Change	1991 OR	1990 OR	Change
1.	TNT Holland	$283.46	$250.87	+12.99	$15.22	$16.89	-9.89	91.0	88.8	-2.2
2.	Arkansas Freightways	198.46	142.95	+38.83	7.78	7.00	+11.14	92.7	90.4	-2.3
3.	Advance Transportation	119.79	114.32	+4.78	0.11	0.91	-87.91	98.1	97.0	-1.1
4.	Hyman Freightways	104.26	103.64	+0.60	0.31	0.25	+24.00	98.9	99.0	+0.1
5.	Fore Way Express	65.76	67.48	-2.55	0.20	0.21	-4.76	99.7	99.7	0
6.	Crouse Cartage	63.45	61.17	+3.73	2.72	1.65	+64.85	95.9	95.3	-0.6
7.	BeMac Transport	54.83	52.92	+3.61	(2.29)	(1.09)	NM	101.2	99.2	-2.0
8.	Jones Transfer	50.43	59.98	-15.92	(3.78)	(1.46)	NM	105.0	99.8	-5.2
	Totals or Averages	$940.44	$853.33	+10.21	$20.27	$24.36	-16.79	97.8	96.2	-1.7

Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC



Source: Alex. Brown & Sons

Regional LTL carriers have done the best job of cleaning up their balance sheets.

the downturn from 1979-1982, when industrial output slid 4.4 percent but LTL volume dropped 28.8 percent. During that recession, freight shifted from unionized LTL carriers to TL carriers. In this recession, TL took only about 2 percent of LTL traffic. Excluding this TL diversion, LTL cargo advanced 1.5 percent in 1991.

Relative Calm

Relative calm has been restored to the LTL segment, in part because of the massive consolidation of carriers that has taken place. The three largest LTL carriers now command 37 percent of the market. Before 1980, they had only 15 percent.

Evidence of this calm is the relatively small number of LTL bankruptcies in 1991. Only one major carrier—Jones Truck Lines—went bankrupt in 1991. A smaller Northeast carrier, North Penn Transfer, also went out of business, but only after the Teamsters refused to accept a cut in wages.

The calm may not last. Klein sees consolidation of regional carriers continuing at a rapid clip until a handful of carriers dominate each of the short-haul markets. "While some independent regional carriers will move to the top of the heap, most of the dominant regional lines will be affiliates of the major transcontinental lines," he says.

John G. Larkin, vice president with Alex. Brown & Sons in Baltimore, is more optimistic about the future of regional carriers. He says the performance gap between the national and regional/inter-regional carriers is widening, with the regionals coming out ahead. Tonnage growth is the main difference. Nationwide operators like CF MotorFreight, Roadway Express, Yellow Freight and Carolina Freight are experiencing only modest, 2-3 percent year-over-year changes in tonnage.

continued

SOUTHEAST & SOUTH CENTRAL LTL — 1991 vs. 1990
(Millions of Dollars)

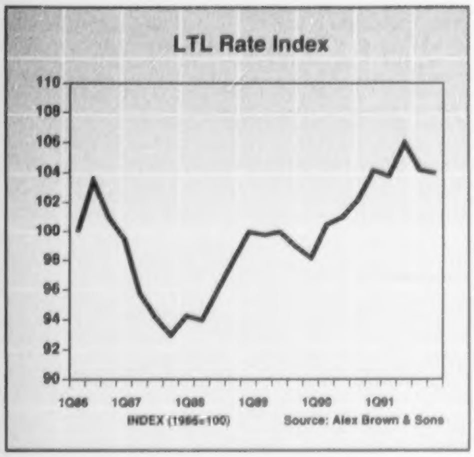
Rank	Carrier	1991 Revenue	1990 Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	Central Freight Lines	$219.56	$226.42	-3.03	$2.07	$5.38	-61.52	97.4	96.5	-0.9
2.	AAA Cooper Transportation	166.89	157.86	+5.72	7.46	9.90	-24.65	91.1	89.4	-1.7
3.	Southeastern Freight Lines	159.96	154.42	+3.59	11.70	14.41	-18.81	92.4	90.6	-1.8
4.	Averitt Express	164.00	142.66	+14.96	5.21	3.64	+43.13	93.4	93.9	+0.5
5.	Merchants Fast Motor Lines	105.29	102.93	+2.29	(0.03)	0.53	NM	99.3	98.9	-0.4
6.	Saia Motor Freight Lines	109.40	102.55	+6.68	4.69	5.40	-13.15	89.1	86.1	-3.0
7.	Transus Inc.	81.21	80.37	+1.05	(0.96)	1.17	NM	101.7	98.7	-3.0
8.	Spartan Express	89.49	78.60	+13.85	(5.50)	(3.49)	NM	107.0	104.3	-2.7
9.	Standard Trucking	60.09	58.47	+2.77	(0.15)	0.41	NM	99.4	97.5	-1.9
10.	Armellini Express Lines	49.50	51.06	-3.06	0.02	0.08	-68.00	98.4	96.7	-1.7
11.	Southwestern Motor Transport	56.36	57.87	-2.61	0.64	0.91	-29.67	98.2	97.6	-0.6
12.	Smalley Transportation	41.19	51.97	-20.74	(2.78)	(1.12)	NM	103.7	100.6	-3.1
	Totals or Averages	$1,302.94	$1,265.18	+2.98	$22.37	$37.22	-39.89	97.6	95.9	-1.7

Key: NI = net income; OR = operating ratiol; NM = not meaningful
Source: ICC

WESTERN & ROCKY MOUNTAIN LTL CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Revenue	1990 Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	Viking Freight Systems	$233.75	$223.95	+4.38	$8.39	$9.08	-7.60	93.7	90.8	-2.9
2.	G.I. Trucking	103.33	103.82	-0.47	0.13	1.57	-91.72	97.3	94.7	-2.6
3.	Willig Freight Lines	75.19	81.37	-7.59	(1.80)	0.20	NM	99.9	95.6	-4.3
4.	TNT Reddaway Truck Line	61.61	50.98	+20.86	4.00	3.44	+16.12	88.8	88.1	+3.44
5.	TNT Bestway Transportation	59.73	60.40	-1.11	5.21	3.64	+43.13	93.4	93.9	+0.5
6.	Motor Cargo	51.85	49.07	+5.67	2.31	1.88	+22.87	94.5	91.9	-2.6
7.	Lynden Transport	49.54	46.69	+6.09	2.04	2.30	-11.17	95.6	92.3	-3.3
	Totals or Averages	$635.00	$616.28	+3.04	$20.28	$22.11	-8.29	94.7	92.5	-2.3

Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC



Rates held up well except in areas battered by recession or excess capacity.

Larkin says the regional/inter-regional carriers are doing better as the modest recovery unfolds. "As shippers opt for faster delivery times, the regional distribution expertise and lower cost structure that regional carriers offer make the future bright for these carriers," Larkin says. "Tonnage year-to-date for some regionals was up 10 to 25 percent over last year."

Both analysts agree that the financial outlook is improving for all LTL carriers. Klein says excess capacity has been wrung out the system. "With fewer idle rigs and employees, carriers can afford to turn away unprofitable freight," he says. "Rates are already beginning to firm."

Larkin says prices should remain firm as long as the large carriers avoid the temptation to cut rates aggressively. "Since the April 1 Teamsters pay increase left only a small portion of the January 1 rate increase on the table to help battered margins," says Larkin, "we see no reason for a price-driven market share battle in the near future."

Among the regional carriers, Larkin says rates remain highly unstable. "Where the economic rebound has been slow to materialize or where overcapacity exists, especially in the Northeast and in California, intense rate competition continues relentlessly," says Larkin.

There is sufficient competition to keep LTL rates from rising significantly short-term. Klein sees revenue per ton increasing about 3 percent in 1992—twice the amount in 1991 and the strongest gain since 1986. Rates per ton have fallen 20.3 percent since 1983. Also, LTL volume should post a 3.5 percent gain in 1992.

LTL carriers are trying to wean shippers away from rate discounting. Most carriers took rate hikes in January of 4 to 5 percent, and pledged to make it the only increase of the year. Presumably, this tactic will help shippers budget their transportation costs better, and carriers will save money because they will not have to revise tariffs as often. ■

ANR LOOKS TO CONTINUE ITS TURNAROUND

The honors for most improved financial performance in the LTL industry have to go to ANR Freight System. This choice may seem unlikely for a carrier that suffered a year-to-year revenue drop of 27 percent and a net loss of $25 million in 1991, but look at the positive side: ANR's operating ratio improved from 140 in 1990 to 125 in 1991.

According ANR's Executive Vice President and CEO, Larry Jouett, ANR has recorded seven consecutive quarters of revenue and operating improvement. "Our account base has grown by approximately 10 percent as customers discover our service performance and give us a try. That's why we are a growing carrier," he says.

Clearly ANR has come a long way since May of 1990, when the then-national LTL carrier decided the only way to survive was to downsize to a regional carrier. In a matter of months, ANR closed scores of terminals and laid off hundreds of employees. The cost to implement this downsizing accounted for the operating ratio of 140 in 1990. ANR's new operating area was limited to the Great Lakes states and several points in Texas and on the West Coast.

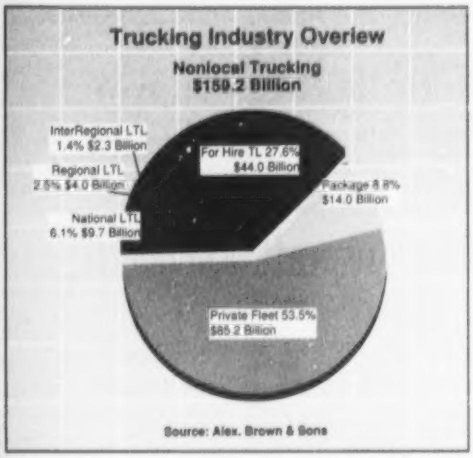
The downsizing appears to be having the desired effect. Fourth quarter 1991 revenue per workday increased by 7.3 percent over the third quarter and 17.3 percent over the same quarter of the prior year. ANR's fourth quarter operating ratio improved by 4.6 percentage points compared with the third quarter and 24.7 points compared with the prior year's fourth quarter.

ANR could become the only major carrier to survive such a radical restructuring, thanks to the financial commitment of its parent, $9 billion Coastal Corporation. With an operating ratio still well over 100, ANR is hardly out of the woods. Still, ANR's management is outspokenly confident that the turnaround will continue. "Some of our major terminals returned to profitability in May," says Jouett. "Most of our locations are hundreds of dollars a day away from enough top-line revenue to get into the black."

Truckload Returns to Stability

Massive investment and fierce competition led to overcapacity in the truckload business in the 1980s. The shoe could be on the other foot soon.

By Thomas A. Foster, Editorial Director



Source: Alex. Brown & Sons

Truckload accounts for the second biggest piece of the trucking industry pie.

The truckload industry, at least the general commodity carriers, had a surprisingly good year in 1991 compared with other sectors of the trucking industry. With any significant improvement in the economy, the outlook for 1992 is even better.

Revenue for the 50 largest general commodity carriers tracked by DISTRIBUTION climbed an average of 10 percent. This group of carriers represents approximately half of the $16 billion dry van business. For the larger carriers in the Top 50, increases of 20 percent or more were common. Operating margins did not move for the entire group, and on average, provided the carrier with a gross margin of over four percent. Net income was a different story. The TL group, which tends to be highly leveraged with debt, fell further into the red after paying its huge interest costs and went from a loss of $7.5 million in 1990 to a loss of $45 million in 1991.

The tank truck carrier industry, based on the 12 leading carriers that DISTRIBUTION tracks, experienced modest revenue gains of nearly 4 percent and virtually no improvement in operating margins. Average operating margin was less than 4 percent. Net income plummeted 92 percent from $207 million in 1990 to a total of $15 million in 1991.

The 15 major household goods carriers tracked by DISTRIBUTION saw their revenues fall by 3 percent in 1991, no doubt because the recession slowed corporate relocations considerably. Operating margins remained extremely thin, averaging less than 2 percent. Surprisingly, net income performance improved by over 300 percent for the group. HHG carriers obviously have learned how to control expenses in bad times.

According to John Larkin, a trucking analyst with Alex. Brown & Sons in Baltimore, the dry van general commodity carriers are not only the largest single part of the $44 billion for-hire truckload market with 40 percent of the total revenue, but it is also where the most interesting action is in the TL industry.

Carriers in this sector are just getting over a slump caused by four or five years of overcapacity. They are now poised for dramatic change. Larkin sees six trends reshaping the TL sector:

- Further rationalization of the long-haul TL sector because of reduced access to capital and competition for qualified drivers
- Increased cooperation of long-haul TL carriers with the railroads
- Greater interest in the short-haul market
- Greater emphasis on providing dedicated contract carriage
- Diversification into niche markets
- More international activity as the North American Free Trade Agreement increases demand for TL services.

The long-haul generic market is beginning to revive, says Larkin, but rationalization is still going on. This sector attracted what Larkin calls "massive injections of capital" dur-

continued

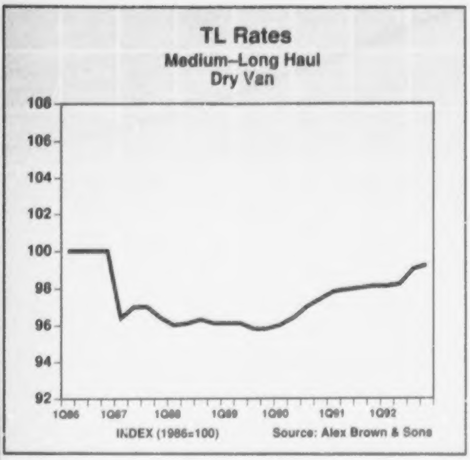
ing the 1980s. "We ended up with too much TL capacity in the long-haul generic markets because of these investments," says Larkin. At the same time this capital was coming into the long-haul TL markets, he explains, steamship operators were trying to find ways to move imports and exports more efficiently. They came up with the stacktrain, which created even more capacity for low-cost, long-haul movement of generic TL traffic. Stacktrain capacity was concentrated in lanes already satu-

continued

TOP 50 GENERAL COMMODITY TL CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	Type	1991 Revenue	1990 Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	Schneider National	V,B,FB	$908.00	$796.36	+14.02	NA	NA	NA	NA	NA	NA
2.	J.B. Hunt Transportation	V,FB	732.61	579.83	+26.35	29.98	30.05	-0.23	91.80	90.20	-1.60
3.	Ryder Distribution	V	379.23	314,73	+20.49	5.53	6.09	-9.32	97.18	96.40	-0.78
4.	Werner Enterprises	V	322.83	305.13	+5.80	19.69	18.01	+9.28	89.50	89.20	-0.30
5.	Builders Transport	V,FB	212.37	240.76	-11.79	(3.54)	(10.70)	NM	96.40	97.40	+1.00
6.	Burlington Motor Carriers	V	249.52	235.23	+6.07	NA	NA	NA	95.90	94.50	-1.40
7.	Ranger Transportation	V	248.53	236.85	+4.93	4.15	0.24	1629.17	96.30	97.10	+0.80
8.	MNX	V	288.66	198.92	+45.11	1.66	0.22	+654.55	98.10	98.20	+0.10
9.	CRST International	V,FB	216.37	182.71	+18.42	NA	NA	NA	95.80	96.30	+0.50
10.	Swift	V	190.68	156.33	+21.97	6.47	6.66	-2.91	93.10	90.10	-3.00
11.	Signal Delivery Service	V	171.49	211.59	-18.95	(2.11)	(0.31)	NM	97.50	96.10	-1.40
12.	Independent Freightways	V	158.66	154.88	+2.44	2.94	0.25	1095.12	95.80	96.10	+0.30
13.	M.S. Carriers	V	152.57	123.58	+23.46	7.76	6.38	+21.59	89.90	89.40	-0.50
14.	Crete Carriers	V	152.48	131.37	+16.07	10.78	7.57	+42.40	93.00	94.60	+1.60
15.	Contract Freighters	V	140.03	119.86	+16.82	9.43	10.75	-12.26	89.58	87.50	-2.08
16.	KLLM Inc.	R,V	129.57	125.76	+3.03	2.82	2.77	+1.88	93.20	92.70	-0.50
17.	Tri-State Motor Transit	V	126.26	117.35	+7.59	(0.16)	0.91	NM	96.50	95.10	-1.40
18.	C.R. England & Sons	R,V	122.16	97.19	+25.70	5.63	3.73	+50.83	92.60	92.60	0.00
19.	Anderson Trucking	V	119.47	113.20	+5.54	1.77	2.33	-23.99	97.30	95.20	-2.10
20.	New Prime	V	118.78	98.63	+20.43	6.58	3.43	+92.01	90.80	92.60	+1.80
21.	Universal Am-Can	V	111.96	105.81	+5.82	(172.00)	0.43	NM	99.60	98.70	-0.90
22.	National Freight	V	105.07	118.18	-11.09	(2.86)	(10.91)	NM	99.60	106.60	+7.00
23.	Munson Transportation	V	104.46	107.85	-3.15	(0.50)	(0.68)	NM	95.30	95.70	+0.40
24.	Dart Transit	V	104.28	97.21	+7.27	1.68	2.89	-41.87	96.70	95.10	-1.60
25.	Poole Truck Line	V	101.73	110.73	-8.13	(4.53)	2.66	NM	99.80	96.70	-3.10
26.	Ligon Nationwide	FB,V	101.32	104.86	-3.37	0.44	0.01	6214.29	97.00	97.70	+0.70
27.	Mercer Transportation	V	100.56	88.31	+13.88	3.95	3.33	+18.56	95.80	96.00	+0.20
28.	Ace Transportation	V	91.02	134.06	-32.11	0.79	1.04	-24.42	99.30	96.10	-3.20
29.	Freymiller Trucking	R,V	92.36	86.09	+7.28	(1.49)	2.05	NM	97.70	90.60	-7.10
30.	Marten Transport	V	87.76	81.35	+7.88	3.45	1.79	+92.63	93.45	93.40	-0.05
31.	Midwest Coast Transport	V,R	82.83	79.26	+4.50	1.90	1.54	+23.49	94.30	96.30	+2.00
32.	Robertson (PFT/CX)	V,FB	80.05	83.72	-4.37	1.43	1.76	-18.67	97.50	97.90	+0.40
33.	Roadrunner Trucking	V	80.02	82.79	-3.35	0.96	0.96	0.10	98.40	96.00	-2.40
34.	National Carriers	R,V	75.88	76.25	-0.49	0.59	1.55	-61.81	97.10	95.80	-1.30
35.	Heartland Express	V	73.80	62.81	+17.49	2.23	1.22	+82.87	95.30	97.40	+2.10
36.	U.S. Express	V	73.47	54.42	+35.00	2.15	NA	NA	88.00	91.20	+3.20
37.	American President Trucking	C,V	72.57	53.06	+36.77	(5.54)	(6.25)	NM	99.10	112.00	+12.90
38.	Jack Gray Transport	V	71.36	74.53	-4.26	1.85	3.27	-43.34	98.00	97.00	-1.00
39.	Willis Shaw Express	V,R	67.33	63.83	+5.47	5.13	2.58	+98.64	90.20	90.60	+0.40
40.	PAM	V	65.72	57.69	+13.92	(2.95)	(17.73)	NM	101.80	97.30	-4.50
41.	Southwest Motor Freight	V	64.66	58.98	+9.62	2.70	(2.34)	NM	92.60	99.90	+7.30
42.	Acme Truck Line	V	58.91	61.44	-4.11	0.39	1.47	-73.85	99.10	97.30	-1.80
43.	Shaffer Trucking	V	58.72	49.55	+18.50	5.55	4.54	+22.24	91.40	92.20	+0.80
44.	Alterman Transport	V,R	58.20	58.62	-0.71	(0.67)	1.81	NM	98.40	100.00	+1.60
45.	Savage Industries	V,FB	56.76	47.32	+19.95	0.54	1.97	-72.61	97.60	94.20	-3.40
46.	McClendon Trucking	V	54.08	50.06	+8.05	3.34	3.17	+5.20	90.60	91.80	+1.20
47.	Deaton Inc.	V	50.80	52.61	-3.44	(1.32)	(0.35)	NM	100.00	99.50	-0.50
48.	T.L.C. Lines	V	50.60	50.65	-0.10	(0.35)	0.13	NM	98.50	98.10	-0.40
49.	Jones Motor	V,FB	50.43	59.98	-15.92	(3.78)	(1.46)	NM	105.00	99.80	-5.20
50.	Eck Miller Transportation	V	46.02	43.39	-6.07	2.16	1.67	+29.16	94.90	96.70	+1.80
	Totals or Averages		$7,432.97	$6,801.26	+9.29	($45.40)	($7.52)	NM	95.76	95.69	+0.07

Key: NI = net income; OR = operating ratio; NA = not available; NM = not meaningful; V = dry van; R = reefer or temperature controlled; FB = flat bed; B = bulk; C = container chassis
Source: ICC and individual carriers



Shippers shared the pain of recession by resisting TL rate increases. That could change soon.

rated with efficient TL carriers.

"This put a squeeze on margins in these lanes and essentially cut off the flow of capital in this industry," says Larkin. "It has taken 3-4 years for this part of the industry to rationalize. With the cessation of capital inflows to this segment and with the pricing and capacity discipline that has been exercised by the larger carriers, we should have financial stability returning to the TL sector."

However, as these carriers require more capital to replace equipment and invest in terminals, technology and people, only the healthy ones will have access to funds.

"Banks are much less willing to lend money to weak carriers," says Larkin. Insurance companies are also being much more selective. "All of these factors make it difficult for weaker carriers to survive, much less prosper," says Larkin. "The economic downturn has further squeezed marginal carriers. If 20 carriers serve a particular shipper and that shipper's business drops by 10 percent, carriers 19 and 20 on the depth chart will end up getting pushed off the edge of the cliff."

These weaker carriers will soon find out how scarce investment capital is, as tougher environmental laws and technology advances force them to upgrade equipment. At an Alex. Brown seminar held earlier this year in New York, Kirk Thompson, president and CEO of J.B. Hunt Transport Services pointed out that diesel engine smoke flunked air quality tests in California. "There is going to be a need for significant investment in new equipment to meet the higher environmental standards, and this alone will force more consolidation."

Smaller carriers are also being squeezed by the worsening driver shortage. All TL carriers face an already shrinking pool of quality drivers whittled down by tougher licensing requirements and drug testing.

"These drivers want to work for the top carriers," Larkin says. "They are looking for stability. They want good, solid pay and benefits. They like to drive nice, clean late-model trucks. Carriers that have succesfully managed the process of driver recruitment and retention are poised for success in the 1990s."

Truckload carriers are developing strategies to deal with the worsening driver shortage, according to leading trucking CEOs. Swift Transportation has started a driver's school of its own, coordinated its dispatching to get drivers home more often and increased drivers' pay, says CEO Jerry Moyes. "Since we have reduced driver turnover from 118 percent to 80 percent, we have also seen our accident rate, and our insurance costs, go down," he says.

Mike Starnes, president and CEO of M.S. Carriers, says he raised driver pay by 29 percent in 1990 to get the

continued

TOP 12 TANK TRUCK CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Revenue	1990 Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	Chemical Leaman Tank Line	$222.74	$231.35	-3.72	$0.44	$0.43	+2.10	97.5	97.4	-0.1
2.	Bulk Materials	221.60	261.60	-15.29	NA	NA	NA	NA	NA	NA
3.	Matlack, Inc.	191.86	216.88	-11.54	(3.02)	0.67	NM	99.4	96.6	-2.8
4.	Montgomery Tank Lines	132.44	126.56	+4.56	2.01	2.08	-3.27	91.5	91.1	-0.4
5.	Trimac Transport	92.67	98.01	-5.45	1.26	0.15	+752.70	95.4	97.6	+2.2
6.	Groendyke Transport	89.58	84.46	+6.06	1.42	2.10	-32.52	96.5	95.8	-0.7
7.	DSI Transport	80.53	76.49	+5.28	4.26	3.81	+11.81	91.3	91.6	+0.3
8.	Miller Transporters	72.38	75.93	-4.68	0.01	(0.22)	NM	98.4	98.2	-0.2
9.	Central Transport	60.09	57.53	+4.45	(0.15)	NA	NM	99.4	95.8	-3.6
10.	Jack B. Kelley Inc.	52.58	57.38	-8.36	(0.44)	197.00	NM	100.5	99.3	-1.2
11.	Bikmatic Transport	50.75	46.10	+10.07	1.06	0.64	+66.14	95.1	94.5	-0.6
12.	McKenzie Tank Lines	41.19	49.43	-16.66	3.49	NA	NM	95.0	99.5	+4.5
	Totals or Averages	$1,308.40	$1,381.72	-5.31	$10.34	$206.66	-95.00	96.4	96.1	+0.1

Key: NI = net income; OR = operating ratio; NA = not available; NM = not meaningful
Source: ICC

best drivers. His drivers now start out at 26 cents a mile and get a one cent per mile raise with each year of service until they cap out at 30 cents.

"Our goal for turnover is 50 percent," says Starnes, who pegs current turnover at 80 percent. "Even our marketing efforts are tied into this goal. We are looking for driver-friendly freight that will get the drivers home more often."

One answer to the driver shortage for certain movements is to put long-haul freight on the rails. Larkin says long-haul carriers are pressing major railroads for marketing and operating agreements that establish intermodal partnerships.

"For many years, rail intermodal was not used by the TL carriers because service quality was poor and shippers simply did not want their freight moved on the rails. Most of these perceptions have finally changed," says Larkin.

Short-Haul Is Hot

One of the hottest segments in truckload is the short-haul market. This sector has been slower to grow because less capital has flowed into it, and also because it is much more complicated. "To be successful in this market, operators must be able to load and dispatch each truck one or more times a day," says Larkin. "Only a few carriers have the high quality loading, operating and management control systems to keep trucks loaded."

He says the successful carriers in this segment such as Heartland and M.S. Carriers have traditionally enjoyed wider margins than the carriers in the longer haul segments. "These margins may not last forever because more and more carriers will grow into the short-haul markets," says Larkin. "The market under 600 miles provides ample room for growth."

Another big opportunity lies in dedicated contract carriage. Mike Starnes says dedicated carriage is ideal for TL carriers such as his that have the capability to handle large volumes of short-haul traffic. "We have to be much more aggressive if we are to capture this business, which is still dominated by the leasing companies," says Starnes. "TL carriers have an important advantage because we can fill the empty miles. A leasing company cannot. But we have to sell this message."

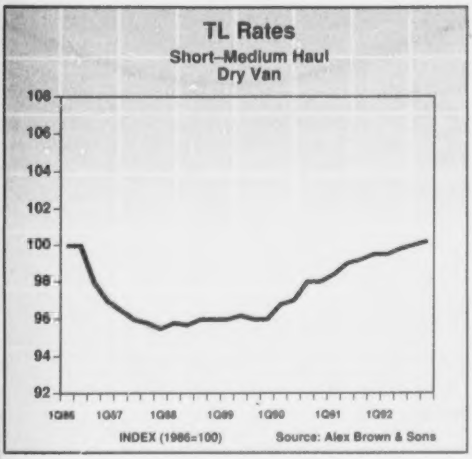
The North American Free Trade

continued

HOUSEHOLD GOODS CARRIERS—1991 vs. 1990
(Millions of Dollars)

Rank	Carrier	1991 Total Gross Trucking Revenue	1990 Total Gross Trucking Revenue	% of Change	1991 NI	1990 NI	% of Change	1991 OR	1990 OR	% of Change
1.	North American Van Lines	$752.61	$775.65	-2.97	$2.07	($9.05)	-122.87	97.4	99.6	+2.2
2.	United Van Lines	474.91	473.50	+0.30	7.46	0.51	+1362.75	91.1	98.6	+7.5
3.	Allied Van Lines	377.11	398.58	-5.39	11.70	1.95	+500.00	92.4	99.0	+6.6
4.	Mayflower Transit	279.14	310.48	-10.09	5.21	2.58	+101.94	93.4	93.1	-0.3
5.	Atlas Van Lines	212.39	216.68	-1.98	(0.03)	3.19	NM	99.3	98.0	-1.3
6.	Bekins Van Lines	190.55	212.70	-10.42	4.69	1.19	+294.12	89.1	97.6	+8.5
7.	Graebel Van Lines	99.36	96.76	+2.69	(0.96)	1.83	NM	101.7	96.7	-5.0
8.	Burnham Services	89.01	92.51	-3.79	(5.50)	0.19	NM	107.0	98.2	-8.8
9.	Paul Arpin Van Lines	65.40	55.47	+17.91	0.02	0.09	-73.33	98.4	100.3	+1.9
10.	Global Van Lines	62.33	56.87	+9.59	(0.15)	0.54	NM	99.4	99.0	-0.4
11.	Wheaton Van Lines	42.93	47.79	-10.17	0.30	0.09	+243.18	98.2	94.0	-4.2
12.	New World Van Lines	40.91	40.90	+0.02	2.09	2.10	-0.67	103.7	97.9	-5.8
13.	National Van Lines	32.33	32.68	-1.07	0.01	0.21	-96.62	107.7	98.9	-8.8
14.	American Red Ball Van Lines	27.32	24.88	+9.80	0.44	0.17	+169.09	98.6	98.6	0.0
15.	Interstate Van Lines	10.54	12.34	-14.64	0.66	0.76	-12.17	95.9	95.9	0.0
	Totals or Averages	$2,756.83	$2,847.79	-3.19	$28.02	$6.34	+342.24	98.2	97.7	-0.5

Revenue for four of the largest HHG carriers includes the following general freight revenue: North American, $213.91 million; United Van Lines, $16.14 million; Atlas Van Lines, $6.29 million and Bekins Van Lines, $9.6 million.
Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC and carrier reports



A driver-related capacity shortage could accelerate the timetable for TL rate hikes.

Agreement also presents tremendous opportunities for the TL carriers, says Larkin.

"We are going to see a tradeoff between transportation and manufacturing costs," says Larkin. "There is a shift of manufacturing from Canada to the U.S. and then down to Mexico. Manufacturers are trading off lower labor costs for higher transportation costs, and that increases demand for truckload services."

In the Driver's Seat

For the first time since deregulation, truckload pricing power may soon be shifting to the carriers. Ironically, this shift is being caused by thin margins that have been whittled down to the point where carriers are barely able to earn a return on their invested capital. "Without adequate returns, companies cannot replace their assets, and ultimately they go out of business and capacity goes away," says Larkin. "The carriers that have survived have learned from past mistakes about capacity addition in bullish freight markets, which causes prices to remain flat. The days of 40-45 percent equipment additions per year are gone."

A rebound in the economy should help create a capacity shortage, says Larkin. "This shortage will be driver-related more than capital- and equipment-related," he says. "As the economy revives, other jobs will be created and that will make it tougher and tougher for TL carriers to find qualified drivers."

Larkin says the combination of these factors is contributing to a potential shortage of capacity that should, over time, permit TL carriers to raise their rates, albeit at a painfully slow rate. He sees annual rate increases for 1992 in a range from 1.5 to 4 percent, which is about what happened in 1991.

More importantly, Larkin says shippers' attitudes about rate increases are slowly changing. Says Larkin: "Enlightened shippers are willing to exchange higher rates over one to three years in exchange for guaranteed high-quality capacity commitments." ■

CFI SEEKS GROWTH BY CROSSING BORDERS

Contract Freighters Inc. reports that about half of its 1991 revenues of $140 million were derived from freight originating from or destined to points outside the U.S.—enough to make CFI the first trucking company ever to receive the President's "E" Award for export service excellence.

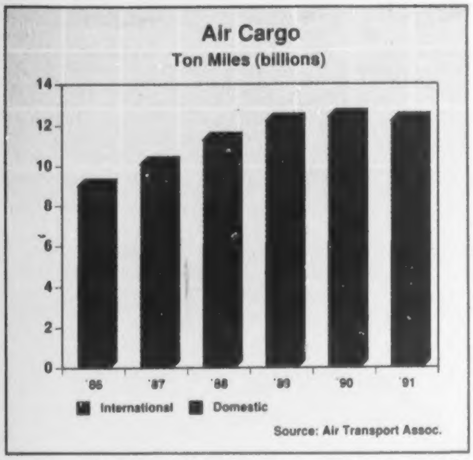
The Joplin, Mo.-based truckload carrier enjoys a particularly strong presence south of the border, where on any given day about 900 CFI trailers are in transit via the company's Mexican partners.

The company has been able to identify and team up with a core group of about 20 Mexican carriers driven to the high quality standards demanded by CFI's customers, which largely ship high-value, time-sensitive freight often used in just-in-time inventory control programs, says Glenn Brown, CFI president.

Brown says CFI's fleet of 3,500 air-ride trailers is a big plus for its Mexican customers. "Our customers experience virtually no damage to their cargo, which is important, given the infrastructure conditions in that country and the nature of the freight we handle—electronics, calibrated equipment and auto parts," he says.

Sales and customer service activities in Mexico are conducted in tandem with a crew of bi-lingual Mexican nationals employed by CFI. Home-grown software programs designed at CFI headquarters perform language translations for all necessary functions, from dispatch and operations to claims and accounting. All of the core carriers are linked to CFI via EDI. "Any customer who is on-line with CFI via EDI can access updated information with regard to the movement of their freight in all three countries," Brown says.

CFI has established growth objectives of 10 percent a year for the next five years. Brown predicts the majority of that growth will be in the international arena. In the past two years CFI has built new terminals in Dallas, El Paso and Laredo to facilitate anticipated growth in the transborder trade.



Source: Air Transport Assoc.

Domestic ton miles have remained steady since 1986.

Trends Bode Well For Air

Domestic U.S. and international airfreight markets are experiencing parallels. Though not as rapid as the trend of the 1980s, growth is expected in the market.

By E.J. Muller, Senior Editor

The airfreight market, which for all intents and purposes was born in this country at the time of deregulation, has emerged from its teen years. Explosive expansion has leveled off. Growth curves of 30 percent in cargo (by weight) will have receded to 7-8 percent. Developments won't be as rapid in the coming years as they were in the 1980s, but they will be steady and positive.

According to the Atlanta-based Colography Group, which every year produces an exhaustive analysis of worldwide airfreight markets, there are important parallels between the domestic U.S. and international airfreight markets. Shippers will use air service more frequently, but in smaller shipment sizes. This reflects a general business trend toward time-based management, in which logistics attempts to maintain a balanced flow between raw materials, in-process work, and finished goods distribution. If the size and price is right, airfreight has a prominent place in this strategy.

"What's become more important to shippers, both in the U.S. and abroad, is the guarantee of a time-definite service," says the Colography Group's Ted Scherck. "Shippers are learning when it is the correct time to use air, and they are planning accordingly." The trend toward more reliable delivery service, often deferred (three day service or more), rather than the speed of overnight, is continuing, he says.

Both domestically and internationally, package business of the 70 lbs. or less variety, is the fastest growing market segment. Last year saw a 9.8 percent rise in package traffic, as compared to 1.4 percent for envelopes and 2.2 percent for freight. Freight revenue growth, however, just edged out package revenue growth, 7.5 to 7.4 percent. Envelope revenue grew only .7 percent. While the latter number may not seem impressive, consider that many analysts had predicted a massive decline in envelope business with the advent of fax machines. That prediction has not happened.

The most significant trends in the domestic market, according to Scherck, are:

- The ruralization of freight service. More businesses are leaving metropolitan areas to relocate in outlying regions. They are in search of smaller, less volatile communities with eager workforces, where there is less union presence and the local governments will promise tax deferrals to create employment opportunities. A large Ohio-based toll maker, for example, will be shutting its aging urban plant, which would cost $100 million to retool. Instead, it will build four separate facilities around the country and shuttle production material via the domestic air network. Scherck believes this is a steadily progressing trend.
- The growth of package shipments. Again, a general business trend that bodes well for air service. As minimum order quantities fall due to the impact of inventory reduction strategies on purchasing patterns,

continued

shipment sizes will decrease, making air a more affordable alternative for companies seeking to level out production cycles.

• Time-definite service. Airfreight providers don't have to be super-fast; they must be super-reliable. "On-time delivery has to be at least at the 95 percent level for a vendor to even be in the game anymore," says Scherck. It should be noted that these trends are in no way confined to airfreight. This is pretty much what's expected to affect truck, rail and ocean delivery as well.

Scherck's market analysis focuses mainly on the major integrated carriers: Airborne, Burlington Air Express, DHL, Emery Worldwide, Federal Express, UPS and the U.S. Postal Service (often overlooked, even though it's the largest carrier by volume). It is these seven companies that now control 90 percent of the domestic market for envelopes, packages and freight. Scherck expects to see this list diminish in the 1990s. "I think there may be two too many," he says, declining to speculate as to which may drop out. That may or may not happen. The deathwatch has been on these carriers for years, and they're still here.

One of the biggest developments of the past year, Federal Express' plan to move into UPS' ground service domain, didn't surprise Scherck at all. "Once these companies have met the capital investment requirement of this business, they are driven to push more units through their system. That's what Federal is doing." He doesn't think they'll lose money at it, either, even though they'll crack the market by initially flying freight at or near UPS ground rates. "Linehaul costs in the domestic market are not as significant to these companies as the costs of general administration and pickup and delivery," Scherck adds. As long as Fed Ex can keep those costs in line, it should provide competition to UPS.

Most U.S. combination carriers still treat cargo as an ancillary service, Scherck notes. "Five percent of revenue (cargo's average contribution)

continued

A CASE OF FORWARD(ER) THINKING

The newly-formed Hi-Tech Forwarders Network is dedicated to maintaining an edge in the airfreight business, despite the encroachment of integrated operators like Fed Ex, UPS and DHL. Its members are independent forwarders, often the market leaders in their region. "We're not small, but we're not multinationals, either," says President Stephen Russell. His San Francisco-based company, Alrod International, is a case in point. It's grown due to the Silicon Valley's massive use of airfreight, but not to the point where it can justify opening global branch offices. Back in 1989, Russell realized there were companies like his all around the globe, approaching the same plateau.

"We were told by a major customer that we were the greatest Mom & Pop company they worked with, but now they needed a partner that could provide global supply chain tracking." That's when Russell decided to bring together independents like Alrod, who could link operations through a global EDI network. "That way we can offer shippers a network where they're getting the leading independent operator in each market." There are 11 U.S. companies currently in the fold, 46 international members and 60 more under consideration.

The Hi-Tech aspect of the entity is two-fold: sophisticated hi-tech communications is the glue, and techno-products will comprise the bulk of the Network's business. This allows all members to tap into the lucrative hi-tech market without having to sacrifice their traditional area of expertise. This isn't an informal thing, either: members have contractual obligations to the group, including performance bonds, bidding requirements and confidentiality clauses.

The group doesn't plan to pool freight in order to get airline discounts. "The members are large enough that they've got their own pricing leverage," says Russell. "Getting guaranteed space is more important than price." Through the pooled resources of members, Russell hopes HTFN will be able to convince carriers (who are invited to be associate members) to help them offer a door-to-door product. ■

equals five percent of input on flight scheduling," he says. Most airlines could compete with integrators in head-to-head competition, but that will never happen as long as the majority of the public wants to fly in daylight, as opposed to freight's more economical fly-by-night hours.

On the international side, the considerations aren't much different. Except for freight forwarders. Domestically, the integrators have all but driven air forwarders to extinction. International, however, is another story. Niches abound for forwarders, either for those with specific geographic strengths or commodity expertise (see sidebar, pg. 34).

"Various regions of the world are at various stages of duplicating what's happened in the U.S. market," says Scherck. Europe, for example, seems headed toward a market mirroring the state system in the U.S. "Shipment demographics will soon mirror what the U.S. looked like after deregulation," says Scherck, "but it will happen much faster than it did here, because of what they've learned watching us." A major factor in the development of a more integrated European airfreight market will be Europe's excellent rail system, which provide swift competition when it comes to rapid cargo movements. It may help keep air rates low on the Continent.

Asia is a bit further behind Europe in developing a cohesive airfreight market, due mainly to more dramatic geographic and political separations between countries. But the market continues to grow, mainly due to the many high-tech sourcing centers based in the region.

Essentially, the future of the airfreight business is based on three key logistical trends: more frequent shipments; lighter weight shipments; and higher value shipments. "Today, half of one percent of total global trade (calculated by weight) moves by air," Scherck notes. "That is double what it was seven years ago. We expect that number to double again by the turn of the century. But on a value basis, about 34 percent of global trade is shipped by air.

"So we're bullish on airfreight in general," he concludes. "It will evolve; competitors will fall by the wayside; but overall, it will grow." ■

Copies of The Colography Group's annual reports on domestic and international airfreight trends can be purchased by contacting them at (404) 565-0464.

AIR CARRIERS RANKED BY 1991 CARGO REVENUE

Rank	Carrier	Cargo Revenue	Total Revenue	Cargo As % of Total Revenue	Revenue Ton Miles
1.	Federal Express	$2,709,826	$7,555,246	35.87	3,622,660
2.	United Parcel Service	1,123,157	1,123,460	99.97	209,634
3.	United Airlines	704,068	11,660,131	6.04	1,214,343
4.	Northwest Cargo	696,749	7,533,713	9.25	1,684,455
5.	Delta Airlines	530,056	10,062,781	5.27	668,392
6.	American Airlines	473,808	12,098,076	3.92	883,862
7.	Air Canada	354,000	3,569,000	9.92	NA
8.	Evergreen International	217,300	358,858	60.55	NA
9.	Continental Cargo	258,886	5,283,494	4.90	563,751
10.	Canadian Airlines Int'l	217,300	2,445,300	8.89	NA
11.	USAir	167,327	6,049,170	2.77	136,665
12.	Trans World Airlines	164,418	3,657,492	4.50	368,940
13.	Pan American World Airways	123,752	2,093,898	5.91	376,694
14.	Alaska Airlines	62,898	933,629	6.74	47,436
15.	Aloha Airlines	27,228	214,022	12.72	8,056
16.	Southwest Airlines	26,428	1,313,677	2.01	12,964
17.	Hawaiian Airlines	10,757	364,339	2.95	5,242
18.	Reeve Aleutian Airlines	7,157	26,612	26.89	NA
19.	Midway Cargo	6,942	250,816	2.77	11,087
	Totals or Averages	$7,882,057	$76,593,714	10.29	9,814,181

Key: NA = not available
Source: Air Transport Association

U.S. AIR CARRIER TRAFFIC AT LEADING U.S. AIRPORTS—1991

Cargo Tons Enplaned and Deplaned	
New York (JFK)	1,257,069
Los Angeles	1,141,196
Chicago O'Hare	1,071,598
Miami	967,241
San Francisco	606,008
Atlanta	599,674
Anchorage	587,817
Dallas/Ft. Worth	547,008
Newark	483,622
Dayton	441,418
Boston	347,735
Seattle	326,569
Memphis	312,016
Denver	292,625
Minneapolis/St. Paul	268,114
Ontario	256,280
Oakland	252,855
Houston	230,304
Detroit	210,785
San Juan	206,471

Source: Airports Association Council International

Yes, as inventories are dramatically reduced, airfreight will prove to be more cost-effective.

Michael F. McGrath
Director, Logistics
DuPont

It more a case of cost avoidance elsewhere, i.e.: if you airfreight in, can you truck out to your customer? Or can you repackage and then air in, and is the air cost and repackaging time a cheaper combination then using surface to ship in and paying local labor costs?

Emily Rodriguez
Director of Transportation
Esprit de Corp

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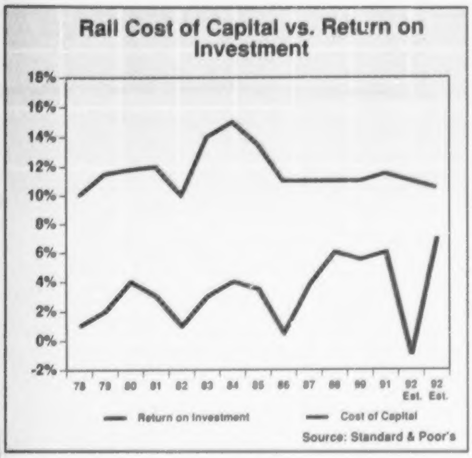
Railroads Weather The Recession Well

The future looks bullish too, as costs continue to fall and traffic begins to pick up.

By Jay Gordon, Executive Editor



Source: Standard & Poor's

The rail industry could hit a record return on investment of 7.6 percent in 1992.

Railroads appear to have handled the recent recession much more smoothly than they did the last time the economy went into a swoon in the early 1980s. Traffic, as measured in carloadings, dropped just 4.3 percent last year, according to the Association of American Railroads. That's compared to a 14.4 percent decline in the 1982 recession.

"When tallied in ton-miles, the industry actually eked out a 0.6 percent gain in 1991, to a record 1,039.8 billion ton-miles," says Stephen R. Klein, an analyst with Standard & Poor's Corporation. "This is attributable to a traffic shift favoring long-haul commodities." In 1982, ton-miles dropped 13.2 percent.

"It could have been a lot worse," says Tom White, a spokesman for the AAR. "Considering that it was a recession year, you'd have to say that (ton-mile record) was a remarkable achievement." Last year also has to be viewed as a watershed because of the reductions in crew sizes negotiated by almost every railroad. Severance payments of up to $100,000 for some employees forced the railroads to incur some $3 billion in special charges for the year, resulting in an actual earnings deficit of $38 million, according to the AAR. "Having to take those special charges was all the more painful because we had a bad economy," White says.

Even though some of those special charges won't show up until the first quarter of 1992, the railroads' are poised for significant profit growth.

While most commodity groups showed year-to-year declines in 1991, traffic remained relatively strong for intermodal, coal, grain, chemicals, food products and paper.

However, several key categories did take significant hits. Automobile shipments, which account for just two percent of the railroads' volume but 11 percent of its revenue, were off by 10 percent. The railroads' largest commodity, coal, is just the opposite: it accounts for 40 percent of the tonnage, but only 25 percent of the revenue. Coal carloadings slipped 3 percent last year, as the recession and some unseasonably warm weather reduced demand for electricity. In light of a 3.4 percent drop in coal production, however, the drop in coal shipments looks less threatening. S&P's Stephen Klein attributes this to the fact that railroads took market share from barge operators last year. Lumber was also down 10 percent, a victim of the weak housing market. And grain, which generates 10 percent of railroads' volume and 8 percent of revenues, was off 4 percent.

Besides intermodal, which posted a 0.6 percent gain in volume, one of the few bright spots was chemicals, which was down only slightly.

A recession is no time to raise rates, and the railroads saw their average revenue per ton-mile fall for the 10th consecutive year. Average revenue per ton-mile went down to 2.59 cents, the lowest figure since 1980, when it was 2.867 cents. Be-

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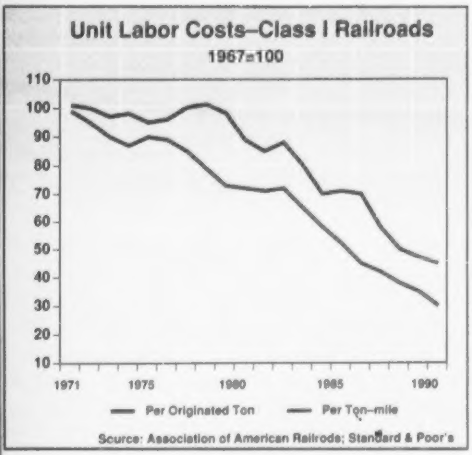


Source: Association of American Railrods; Standard & Poor's

The $3 billion railroads spent on employee severance payments will pay off in lower unit labor costs.

tween 1970 and 1980, revenue per ton-mile doubled, from 1.4 cents to more than 2.8 cents, peaking in 1982 at 3.21 cents. Even with double-digit inflation in the early 1980s, this measure has been down every year since.

The Outlook for 1992

AAR's Tom White says rail traffic began showing surprising strength in the last four or five weeks of 1991, a trend that continued into the first six months of this year. If, as expected, industrial production picks up as we continue our modest economic recovery, S&P predicts that ton-miles could advance by another 3 percent, led by strong showings in lumber, autos, steel, coal and intermodal. In fact, 1992, so far, is shaping up as a banner year.

"We've only got one commodity out of the 19 we track that's down for the first 25 weeks," White says. That commodity is coal, which is off 1.5 percent as a mild winter has given way to an even milder spring.

The good news: growth in motor vehicle volume is up 16 percent for the year so far, which is actually ahead of the auto industry's rate of production. "That's much larger than you could have projected at the beginning of the year," White says; he can only guess at the reasons. Two possible explanations: traffic shifting from truck to rail, or dealers may be trying to build inventories.

Grain also is up 6 percent, mainly on the strength of export grain markets. A big wild card here, Klein says, is the economies of the former Soviet Union and eastern Europe. "Economic instability and a shortage of hard currency may lead to lower sales in these areas," he says. Chemicals are also up 5 percent, and the jump in housing starts brought lumber shipments with it, though they have since leveled off. Shipments of petroleum products are also up 11 percent.

This year should also see railroads continue to improve their cost structure. With labor costs at 45 percent of revenues, the crew size reductions

CREATING THE NEW SP

Colorado billionaire Philip Anschutz has seen nothing but losses since 1988 when he bought the old Southern Pacific and combined it with the Denver & Rio Grande. Now he apparently thinks it's high time he earned a return. He's installed a new management team and charged it with creating a "new SP," with a new mission and a new mandate: be profitable, and do it soon.

"We know what has to be changed to make the SP more customer focused," says Don Orris, executive vice president of distribution services and one of three executives brought in from American President Companies, SP's biggest customer, to effect radical changes in the railroad's service.

The first step is to generate more traffic, especially intermodal, which is now growing at 10 percent a year. To keep the momentum going, SP is investing in 4,400 domestic containers and partnershipping with truckload carriers. Other rail traffic is growing at nine percent. "The railroad is sitting on industries that are growing faster than the economy, such as steel minimills and chemicals," Orris says. The greatest potential, though, may lie in SP's Mexican traffic. Currently, this is a $200 million business that's growing at 20 percent annually.

Service has been improved by getting to the root of problems. Orris points to a complete turnaround in productivity at SP's Intermodal Container Transfer Facility near the ports of Los Angeles and Long Beach. In a dramatic move earlier this year, the SP threw out the International Longshoremen & Warehousemen's Association and put in their own people. "Everyone said this couldn't be done," Orris says.

He claims the new SP's financial turnaround will be just as dramatic. The railroad has already had some success; first quarter 1992 revenues are up $48 million, or 9.1 percent over the first quarter of 1991. And, operating losses dropped from $64 million to $23 million. "We will be in the black in 1992," Orris says, "and producing a positive cash flow in 1993."

That should make Phil Anschutz happy. ■

Are railroads more service responsive today?

"Railroads finally see themselves in the transportation business, and truckers as competitors. There is more price awareness and flexibility today, and a better focus on transit time reliability and consistency."

J.T. Ampuja
Vice President, Logistics
Rich Products Corp.

"The biggest difference we've seen is an awareness that service must improve. Action must follow."

Jacob L. Farrell, Jr.
Director of Logistics
Corn Products
A unit of CPC Int'l

were critical. In addition, last year's contract settlement included provisions for cutting the mileage-based overtime formula, concessions on work rules and some sharing of health costs, Klein says.

Filling a More Strategic Niche

The brief national rail strike in June may create a blip in the AAR's carloading figures. However, the strike's impact also helped spotlight the critical role railroads are playing in the supply chains of certain industries – particularly the auto manufacturers. Though the strike lasted just two days, at least one car maker had to shut plants down, while others eliminated one or two shifts. "The auto industry looks at the railroads as an extension of the assembly line," White says. "They just don't have the inventory on hand, because JIT rail delivery lets them get by without it.

"Years ago, people doubted the railroads could *ever* provide that quality of service," he adds. "But we've shown we can do it." A vast majority of this freight is moving under contract, and the railroads are able to charge higher rates for it; but they also must meet some tough delivery schedules, with penalties for non-performance.

"You're only going to see more of that," White says. "This type of service is expensive, but the shipper is more willing to pay for it because he's saving much more than that on reduced inventory." It also forces the railroads to hunker down and work with their partners to provide a better quality service. "If you want to keep the business," he says, "you can't point fingers."

Another good omen for the rail industry is its increased focus on asset management. "What I have seen indicates they did better in 1991 than 1990, and are expecting to do better in 1992," says Elliott Schrier, an analyst with Manalytics in San Francisco. "They're doing a much better job of fleet management." Increasing return on assets, he adds, is important "because the rail industry has traditionally had a problem with reinvesting in itself."

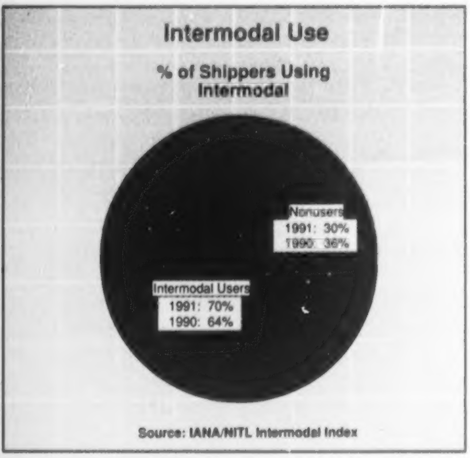
As the railroads' profit picture improves, where will they invest?

- **Equipment.** The railroads will address the commodities that promise the greatest growth. That means investing in more efficient facilities for coal and intermodal, and new technology for chemicals.
- **Track.** Double-stack trains move at high speeds, with a lot of weight on the axles. The track bed needs to be in excellent shape. ■

RAIL SYSTEMS: 1991 vs. 1990
($ millions)

	Major Railroads	1991 Revenue	1990 Revenue	% of Change	1991 NOI	1990 NOI	% of Change	1991 ROI	1990 ROI	% of Change
1.	Union Pacific	$4,662.96	$4,587.74	+1.64	$78.21	$548.42	-85.74	1.32	9.79	-86.52
2.	Burlington Northern	4,558.65	4,674.41	-2.48	(110.90)	414.08	NM	0.00	10.80	NM
3.	CSX Transportation	4,336.38	4,435.76	-2.24	(129.82)	370.10	NM	0.00	5.76	NM
4.	Norfolk Southern	3,653.97	3,785.99	-3.49	222.58	502.55	-55.71	10.29	4.40	+133.86
5.	Consolidated Rail Corp.	3,136.55	3,292.86	-4.75	(130.98)	295.27	NM	0.00	5.13	NM
6.	Southern Pacific Lines	2,670.27	2,760.79	-3.28	(340.63)	(16.84)	NM	0.00	0.00	NM
7.	Atchison, Topeka & Santa Fe	2,153.54	2,111.62	+1.99	183.85	278.20	-33.91	5.29	8.60	-38.49
	Regional Railroads									
1.	Chicago Northwestern	$803.03	$809.95	-0.85	$54.64	$68.47	-20.20	4.99	5.78	-13.67
2.	Soo Line	589.25	593.96	-0.79	24.72	44.95	-45.01	3.75	8.17	-54.10
3.	Illinois Central	549.73	544.17	+1.02	114.33	111.44	+2.59	14.89	15.13	-1.59
4.	Kansas City Southern	322.25	319.89	+0.74	37.67	36.73	+2.56	8.77	9.41	-6.80
5.	Grand Trunk Western	270.44	310.05	-12.76	(40.69)	(0.88)	NM	0.00	0.00	NM
6.	Florida East Coast	138.21	142.64	-3.11	(0.12)	5.22	NM	0.00	2.56	NM
7.	Wisconsin Central	113.66	113.29	+0.32	22.30	23.80	-6.30	9.70	12.90	-24.81
	Totals or Averages	$27,958.89	$28,483.12	-1.84	($14.84)	$2,681.51	NM	4.21	7.03	-40.11

Key: NOI = net operating income; ROI = return on investment; NM = not meaningful
Source: AAR



Source: IANA/NITL Intermodal Index

Intermodal picked up new users in 1991, but existing customers will fuel growth.

Intermodal Wins New Converts

This mode made small gains last year as an alternative for cost-conscious shippers. The real payoff may lie ahead.

By Jay Gordon, Executive Editor

Years from now, the intermodal industry may look back at the current recession as the best thing that ever happened to it.

Not only did intermodal volumes remain strong, they actually grew. Shippers, scouting the best bargains for their transportation dollar, looked to the intermodal alternative to help them stretch their budgets. In some cases, those shippers had not used intermodal since the last recession in 1982.

"The surprise they got," says John McQuaid, president of the Intermodal Association of North America, "was that this is a fundamentally different business than it was a decade ago. Many of them were attracted by the price—but they'll stay because of the service."

Winning new converts has proved difficult for the intermodal industry, which has for decades suffered under a stigma of lackadaisical service, high damage rates and poor coordination among the entities involved. This perception has helped keep non-users on the sidelines, according to the 1991 Intermodal Index, a survey of shippers produced jointly by IANA and the National Industrial Transportation League (see *Tooting Intermodal's Horn*, May 1992, p. 46). Intermodal's growth is being driven in large part by existing users. But trends are afoot that signal a shift in intermodal perceptions and usage:

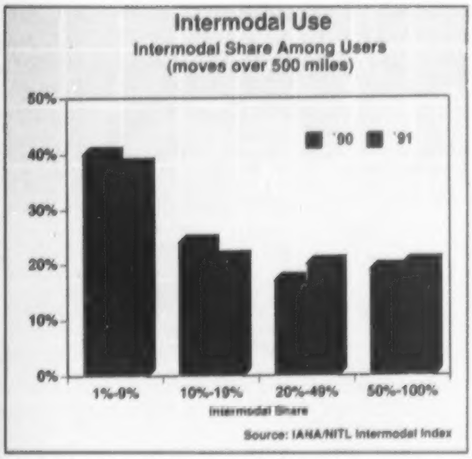
- **Testimonials from the truckers.** Endorsement of intermodal is coming from the unlikeliest of corners—the truckload carrier industry. Driven by the need to reduce linehaul costs and keep a shrinking pool of drivers happy, TL carriers are forming partnerships with the railroads at an unprecedented pace. "Cementing those relationships is the belief that rail service is consis-

continued

INTERMODAL TRAFFIC—1991 vs. 1990

	TOTAL UNITS			CONTAINERS			TRAILERS		
Railroad	1991 Total	1990 Total	% Change	1991 Total	1990 Total	% Change	1991 Total	1990 Total	% Change
Union Pacific	1,164,915	1,019,890	+14.2	649,420	557,251	+16.5	515,495	462,639	+11.4
Conrail	1,140,414	1,164,023	-2.0	562,795	531,276	+5.9	577,619	632,747	-8.7
Atchison, Topeka & Santa Fe	1,037,203	974,147	+6.5	383,796	308,568	+24.4	653,407	665,579	-1.8
Burlington Northern	1,022,478	1,170,207	-12.5	617,801	638,339	-3.2	404,677	531,868	-23.9
Southern Pacific	1,008,597	1,013,307	-0.5	714,940	672,810	+6.3	293,657	340,497	-13.8
Norfolk Southern	860,275	822,199	+4.6	375,719	340,425	+10.4	484,556	481,774	+0.6
CSX Transportation	706,833	733,042	-3.6	340,916	339,952	+0.3	365,917	393,090	-6.9
Chicago & North Western	615,419	583,688	+5.4	537,847	508,845	+5.7	77,572	74,843	+3.6
Florida East Coast	374,843	398,085	-5.8	36,457	15,722	+131.9	338,386	382,363	-11.5
Soo Line	209,121	185,419	+12.8	163,378	120,284	+35.8	45,743	65,135	-29.8
Kansas City Southtern	72,965	73,701	-1.0	26,216	21,233	+23.5	46,749	52,468	-10.9
Grand Trunk Western	52,634	114,388	-54.0	15,142	23,787	-36.3	37,492	90,601	-58.6
Wisconsin Central	28,390	20,454	+38.8	6,265	4,821	+30.0	22,125	15,633	+41.5

Source: AAR



Source: IANA/NITL Intermodal Index

A majority of intermodal customers use it for less than 20 percent of their shipments moving 500 miles or more.

tent with their requirements," McQuaid says. "The truckload industry has set the standards for customer service, so (intermodal) must be meeting their service requirements." This could have a profound impact on reluctant shippers who are watching this scenario unfold. "Shippers who look at J.B. Hunt and Schneider National as industry pace setters and see them use intermodal, they will at least have to look at that option," McQuaid says.

For the railroads, these relationships solve one of their main concerns—asset management. The average turaround time for a TOFC trailer is 17 days; in the truckload industry it's seven days—an enormous gap. "With J.B. Hunt and the others, you have partners that bring assets to the table," McQuaid says. "They are using their own equipment, and they have a track record of intensely managing those assets. That is very appealing to a rail industry that traditionally has viewed asset utilization as its Achille's heel."

The question immediately arises whether the investment and interest on the part of the truckers is transitory, or whether they will be around for the "long haul." That will be determined entirely by economics. McQuaid points out that last year, top management at a number of TL carriers were vehemently opposing anything that would benefit the railroads because of their opposition to the LCV issue. "Now they see the value of intermodal partnerships," McQuaid says. "Those are bottom line issues."

One group that isn't ecstatic about the situation is the shippers' agents. A dramatic example of this was the tiff at this year's Intermodal Expo between the third parties and J.B. Hunt. The trucker was marketing its new intermodal service with a flyer that was disparaging toward them, the agents claim. "It's understandable in an industry that is going through enormous change and rationalization, that there are some concerns among the third parties, particularly about the long-term strategic plans of the railroads," McQuaid says. "Sure there's likely to be some rationalization in the third party environment. But there will always be a role for them." Many intermodal shippers have developed relationships with the third parties, and will ship only with them, he points out. Another positive development, he adds, is that shippers are increasingly using three-way con-

INTERMODAL CONSENSUS BUILDING

Now that there is one intermodal trade group instead of three, the industry can stop finger pointing and start consensus building. At least that's what John McQuaid hopes. McQuaid is president of the newly formed Intermodal Association of North America, which was created last fall when members of three groups—the Intermodal Marketing Association, Intermodal Transportation Association and the National Railroad Intermodal Association—voted to merge.

TRANSAMERICA

In the past, those three groups have all tended to pursue their own agendas, which caused the intermodal industry to lose face both in Congress and, perhaps more importantly, with shippers. The railroads were members of all three organizations and paid the lion's share of the dues in each. They gradually grew tired of supporting different groups that always seemed at crossed purposes, and began forcing the merger issue. Now, members can hash things out together and then present one view—rather than three.

"One of the strengths of the organization is that it's structured in such a way that our committees will deal with substantive issues with all the major players at the table," McQuaid says. "We will deal with problem solving instead of responsibility avoiding." It worked a little differently in the pre-merger environment. In the ITA, for example, if the draymen raised an issue it would be referred to either the rail or steamship division for action—and that group would adopt something that generally protected only its own interests. ■

tracts to get all the intermodal players (shipper, railroad and third party) to clearly define and agree on what's expected of each.

- **Intermodal's increasing role in supporting just-in-time.** Procter & Gamble, for instance, is using intermodal as part of its Continuing Replenishment Program. Intermodal's move from "hard goods" into "soft goods"—the service-sensitive retail industry—is an indication of this mode's improved performance. "There has been this renaissance in the past two years," McQuaid says. "A veil was lifted and a light went on."
- **Intermodal's warts are being addressed.** Drayage, for example, is no longer the "black hole" it once was. "I'd like to put that analogy behind us," McQuaid says. Third parties, and the railroads, are beginning to recognize that the drayman is an integral part of the program. "It shouldn't be the cheapest investment intermodal makes. The drayman is the one the shipper sees, and he needs to be committed to EDI. He has to be adequately compensated to do that."

Just as shippers are moving to a "core carrier" concept, "the railroads are moving toward core draymen," adds Dean Wise, a principal with Mercer Management Consulting, the firm that compiles the Intermodal Index. "The railroads and third parties can count on better coordination with fewer parties, and each company gets the benefit of volume," he says.

- **The explosion in domestic containerization.** For the first time, containerloads originated are substantially ahead of trailerloads, as reported to the Association of American Railroads. The ride characteristics of double-stack trains have combined with improved track and roadbed conditions to give intermodal a ride that is comparable, and sometimes superior, to truck. "We have virtually eliminated damage associated with transit," McQuaid says.

The growth in double-stack has been enough to counter a "disinvestment" in the trailer market. While long-term trends favor COFC, there will always be a niche for trailer traffic; McQuaid says it may even bounce back now that some legislative issues have been resolved. "Part of the problem is that the intermodal investment structure was frozen because of concerns about what would happen with LCVs," he says. The railroads last year successfully lobbied against longer combination vehicles—trucks with longer double and triple trailers. "Now we'll see that money come in to support the equipment needs of the industry," McQuaid says.

- **The undercharge factor.** Some of the premium services that have sprung up have actually been able to command premium prices. "I think shippers have changed, and a lot of that has to do with the undercharge situation," McQuaid says. "They realize that carriers have to make an adequate return if they're going to be around. They are not reluctant to pay a premium if you deliver what you promise." ■

Has drayage improved?

"The image of drayage equipment having only 17 wheels and broken springs has changed. We find many intermodal sales people to be more knowledgeable, as they are selling a service that requires the use of multiple modes."

Jacob L. Farrell, Jr.
Director of Logistics
Corn Products
A unit of CPC Int'l

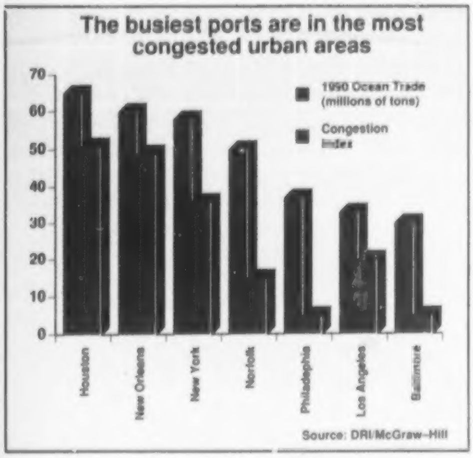
"Draymen, for the most part, have now joined the team and recognize the vital role they play in intermodal service."

J.D. Youngblood
Transportation Mgr.
GE Appliances

Would you rather purchase intermodal from a trucker or a third party?

"A third party. Truckers have not yet proven their capabilities. I expect our confidence in their service will improve with experience."

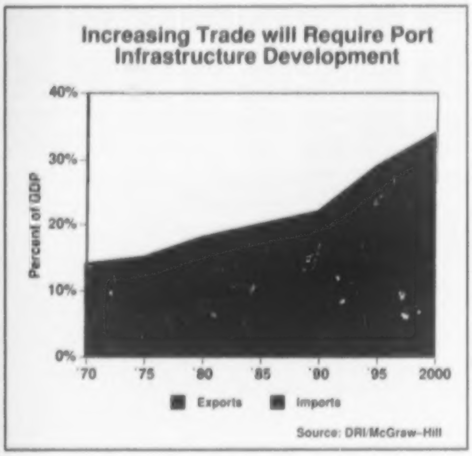
J.D. Youngblood
Transportation Mgr.
GE Appliances



The busiest ports are in the most congested urban areas

Source: DRI/McGraw-Hill

The problem: the busiest ports are in the most congested areas.



Increasing Trade will Require Port Infrastructure Development

Source: DRI/McGraw-Hill

A better infrastructure will have to be developed within U.S. ports.

Development Is Stuck in the Mud

With little help from the government, U.S. ports are finding their projects stuck at the drawing board because of sticky environmental issues.

By E.J. Muller, Senior Editor

Ports used to operate in splendid isolation, typically with marine engineers at the helm. They were funded by bond measures, or state or local taxes, and the public never paid much attention to what happened on the waterfront unless there was a violent dock strike. Ah, the good old days.

Today, the port industry is buffeted by a storm of debate on what role these vital entities should be fulfilling in society's infrastructure. In virtually every region of the country, environmental issues have complicated the efforts of ports to keep pace with accelerated developments in global trade. Ports must be sensitive to the competitive economic issues facing the ocean and air carriers that provide the core of their revenues, but more than ever those concerns must be balanced against the concerns of the public at large—which, rightly or wrongly, often views ports as a main source of air, water and noise pollution.

"The reality is that ports are caught in a crazy quilt of environmental goals and objectives that are not only at odds with the ports' economic development mission, but are in conflict with each other," says Erik Stromberg, president of the American Association of Port Authorities. According to Stromberg, the balance between commercial development and environmental protection is tilting toward the latter. Ports are such a large stationary target that it's easy to see why that's the case. Numerous port projects around the country, aimed at accommodating growing import/export levels, may never be realized due to the added costs of environmental measures. Often, just the delays involved in debating the issues can kill a project. Stromberg notes that port managers now build mitigation costs, anywhere from 10 to 50 percent of total project costs, into their budgets.

The fact that the Army Corps of Engineers is now billed as an environmental agency must be alarming to ports, as well. It's come into closer alignment with the EPA in analyzing port projects. According to Stromberg, the EPA is taking an aggressive approach to controlling industrial expansion by suggesting alternative ports if dredging projects adversely affect environmental conditions within a port area.

The Port of Oakland, California, is a microcosm for what's happening nationwide (worldwide, actually). Located between the "load centers" of Seattle/Tacoma and Los Angeles/Long Beach, Oakland needed to dredge its harbors to a lower depth in order to berth new, larger vessels. Without dredging, Oakland's competitiveness would sink. At every turn, proposals for dumping the spoil were nixed by various NIMBY environmental groups. The port was left pretty much to its own devices to marshal its public relations campaign, which focused on the vital role it played in the economic life of the city and region. The fits and starts went on for more than two years—through four different port directors.

In the midst of the campaign, a new mayor entered city hall. He promptly found a solution to the

continued

city's budget crisis: siphon port revenues into city coffers. Port officials saw future projects headed for oblivion. But local and international business people united in support of the port's autonomy, and the mayor backed down. Months later, thanks to the concerted effort of two Congressmen and the Governor, the port got the okay to dredge—and dump the spoil in a cost-effective spot in the bay. All seemed well.

Then California's mayors had a meeting with the state's Assembly Speaker, one of the most powerful politicians in the state. They wanted innovative solutions to the state's monumental budget crisis; something that would keep the state from hacking away at municipal entitlements. Within weeks a bill was moving through the legislature which could give the state authority to, in essence, confiscate revenue from the ports to replenish the state treasury. If the bill becomes law, it will set a startling precedent that could devastate port coffers nationwide. As Stromberg notes, if the tradeoff presented to the public is between schools, roads, hospitals on one hand, and marine terminals on the other—guess who wins?

"It's the same thing all around the country," says Henry Marcus, professor of marine systems at Massachusetts Institute of Technology. "All ports share these same problems, and there are no obvious solutions."

Marcus thinks that something dramatic is needed to focus federal government attention on port problems. Competitiveness between ports, however, seems to preclude a lobbying effort like the one Sea-Land and American President Lines used to force White House action on a new subsidy reform policy. Marcus has the grim view that even if a major port were to fail, it would barely register on the national political agenda.

"The situation is definitely worse than it was five or six years ago," he says. "It is much tougher to get anything done now. But the stakes continue to get higher and higher. It's not yet clear how things are going to shake out." ■

NEW YORK/NEW JERSEY CELEBRATES SUCCESS IN NORTHEAST

Considering the gloomy state of national port affairs, it isn't easy to find a port director with a positive attitude. But Lillian Liburdi, chief of the port of New York/New Jersey, certainly tries. She believes the port can play an important role in boosting trade in the Northeast region. "We're taking an active responsibility in the success and growth of regional businesses," she says.

What role do shippers play in the port's marketing strategy? "Shippers are why ports are in business," she says, "and understanding that principle puts things into perspective. It helps a port define its mission; it helps set goals and measures for performance; it helps determine successes in quality improvement."

Under Liburdi's stewardship, the port has achieved some significant gains. That's no small feat considering the distressing trends that have hit U.S. ports—especially in the volatile business climate of the Northeast. Liburdi charts some recent successes: the start-up of a daily doublestack service offered by Conrail from New York to Chicago; a new dockside ExpressRail interim intermodal facility that will provide a second DS service six days a week; improved distribution space; rail enhancement at the Auto Marine Terminal; continued development of ACES, the port's expansive EDI networking system; and, reduced labor and port costs brought about through ongoing negotiations with the International Longshoremens' Association.

None of these projects have the massive scope associated with the "load center" label bestowed on NY/NJ in the mid-80s; but they are good examples of the diligent nurturing that beleaguered ports have had to maintain through a very tough few years. Liburdi anticipates that NY/NJ will continue to enhance its position as a cargo thoroughfare by using high-tech systems to spur the "seamless transfer" of goods, in conjunction with traditional harbor and terminal services. ■

U.S. WATERBORNE FOREIGN COMMERCE – 1991
PORT RANKING – BY CARGO VOLUME
(Short Tons, 000s Omitted)

IMPORTS			EXPORTS			TOTAL		
Rank	Port	Volume	Rank	Port	Volume	Rank	Port	Volume
1.	Houston	41,068	1.	Hampton Roads	63,614	1.	Hampton Roads	71,956
2.	New York/New Jersey	38,431	2.	Gramercy (LA)	39,731	2.	Houston	67,560
3.	Corpus Christi	30,345	3.	New Orleans	29,727	3.	Gramercy (LA)	61,172
4.	Philadelphia	22,807	4.	Houston	26,492	4.	New Orleans	47,584
5.	Gramercy (LA)	21,441	5.	Baton Rouge	16,587	5.	New York/New Jersey	46,238
6.	Texas City	20,891	6.	Long Beach	15,246	6.	Baton Rouge	36,474
7.	Baton Rouge	19,887	7.	Tampa	14,631	7.	Corpus Christi	36,159
8.	Lake Charles	18,703	8.	Baltimore	14,501	8.	Long Beach	26,122
9.	New Orleans	17,857	9.	Portland (OR)	13,823	9.	Los Angeles	25,231
10.	Port Arthur	17,536	10.	Mobile	13,582	10.	Lake Charles	24,605
11.	Pascagoula	16,894	11.	St. Rose	12,783	11.	Philadelphia	24,053
12.	Los Angeles	13,097	12.	Los Angeles	12,134	12.	Baltimore	23,913
13.	Paulsboro (NJ)	12,746	13.	Tacoma	9,627	13.	Texas City	23,547
14.	Christiansted (VI)	11,549	14.	Destrehan (LA)	9,490	14.	Mobile	20,619
15.	Long Beach	10,876	15.	Seattle	8,483	15.	Port Arthur	20,503
16.	Baltimore	9,412	16.	New York/New Jersey	7,807	16.	Tampa	20,335
17.	Boston	8,767	17.	Charleston	5,937	17.	Pascagoula	20,285
18.	Chester (PA)	8,473	18.	Savannah	5,906	18.	Portland (OR)	16,773
19.	Hampton Roads	8,342	19.	Lake Charles	5,902	19.	St. Rose	14,727
20.	Mobile	7,037	20.	Corpus Christi	5,614	20.	Seattle	14,608
21.	Freeport (TX)	6,519	21.	Anchorage	5,516	21.	Tacoma	14,522
22.	Seattle	6,125	22.	Duluth/Superior	5,473	22.	Paulsboro (NJ)	12,932
23.	Portland (ME)	6,038	23.	Toledo	5,333	23.	Christiansted (VI)	12,666
24.	Tampa	5,704	24.	Kalama (WA)	5,284	24.	Savannah	10,822
25.	Wilmington (DE)	5,578	25.	Longview (WA)	4,775	25.	Destrehan (LA)	9.575

U.S. WATERBORNE FOREIGN COMMERCE – 1991
PORT RANKING – BY CARGO VALUE
(Millions of Dollars, 000s Omitted)

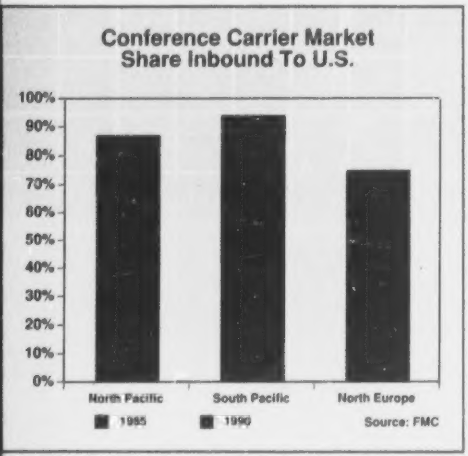
IMPORTS			EXPORTS			TOTAL		
Rank	Port	Value	Rank	Port	Value	Rank	Port	Value
1.	Los Angeles	45,129	1.	New York/New Jersey	17,861	1.	Los Angeles	57,375
2.	Long Beach	37,020	2.	Houston	14,280	2.	New York/New Jersey	49,575
3.	New York/New Jersey	31,714	3.	Los Angeles	12,246	3.	Long Beach	48,863
4.	Seattle	20,201	4.	Long Beach	11,843	4.	Seattle	26,012
5.	Tacoma	17,446	5.	Hampton Roads	10,294	5.	Houston	24,901
6.	Oakland	10,821	6.	Oakland	7,587	6.	Tacoma	23,509
7.	Houston	10,621	7.	Baltimore	7,496	7.	Hampton Roads	19,174
8.	Baltimore	9,108	8.	Charleston	7,206	8.	Oakland	18,408
9.	Hampton Roads	8,880	9.	New Orleans	6,502	9.	Baltimore	16,604
10.	Charleston	6,748	10.	Tacoma	6,063	10.	Charleston	13,954
11.	Port Huron (MI)	5,724	11.	Miami	6,001	11.	New Orleans	11,428
12.	Savannah	5,475	12.	Seattle	5,811	12.	Savannah	10,591
13.	New Orleans	4,926	13.	Savannah	5,116	13.	Miami	9,608
14.	Jacksonville	4,903	14.	Gramercy (LA)	5,097	14.	Gramercy (LA)	8,034
15.	Philadelphia	4,881	15.	Portland (OR)	3,290	15.	Jacksonville	7,483
16.	Portland (OR)	3,738	16.	Jacksonville	2,580	16.	Portland (OR)	7,028
17.	San Francisco	3,654	17.	Baton Rouge	2,355	17.	San Francisco	5,796
18.	Miami	3,607	18.	Wilmington (NC)	2,211	18.	Port Huron (MI)	5,731
19.	Boston	3,306	19.	Anchorage	2,204	19.	Philadelphia	5,704
20.	Corpus Christi	3,118	20.	San Francisco	2,142	20.	Port Everglades	4,873
21.	Port Everglades	2,886	21.	Tampa	2,009	21.	Baton Rouge	4,636
22.	Gramercy (LA)	2,423	22.	Port Everglades	2,007	22.	Corpus Christi	3,946
23.	Texas City	2,319	23.	Wilmington (DE)	1,889	23.	Boston	3,893
24.	Baton Rouge	2,281	24.	St. Rose (LA)	1,755	24.	San Juan	3,723
25.	Chester (PA)	2,251	25.	San Juan	1,339	25.	Wilmington (DE)	3,284

Note: Rankings are based on waterborne foreign commerce and do not include cargo moved domestically between U.S. ports.
Source: U.S. Bureau of the Census

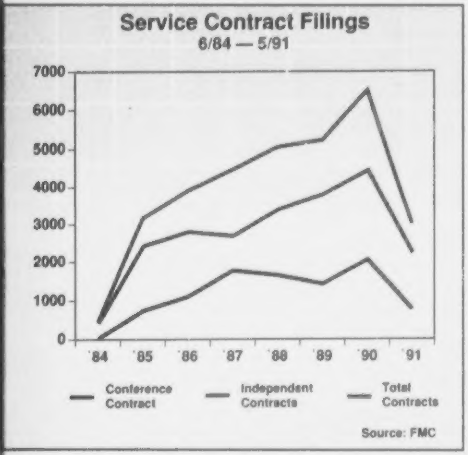
Ocean Carriers Are Holding Their Own

Ocean carriers have had their share of bad luck. Unstable trade situations, rate fixing, space sharing with rival carriers—it's all been adding up. When will it end?

By E.J. Muller, Senior Editor



Conference carrier market share decreased the most in the South Pacific.



After peaking in 1990, service contract filings have dropped off.

"We shipping lines have been bitterly damaged, frustrated and entirely exhausted." That's the life of an ocean carrier, as described by Mutsuo Kamada, director of the North American Liner Division of Mitsui O.S.K. Lines, Ltd. "Likewise, almost all customers were also embarrassed and very much tired with unstable trade situations," he added. Thank you, Mr. Kamada, for pretty much summing up the last few years in U.S. oceanborne import and export trade.

Carriers exhausted themselves trying to lure and secure customers with a greater array of services and expansive intermodal networks, but market pressures frustrated those efforts by keeping rates at what carriers unanimously consider non-compensatory levels. That's the "bitterly damaging" part. Something had to crack, and it did. It was the egos of ocean carrier executives who never imagined they'd have to survive in this business by sharing ship space and services with rival operators. Vessel sharing agreements are the norm in major trade lanes today, rather than the exception. They are viewed as a necessary survival tactic in an increasingly costly industry.

It's another type of sharing, however, that has spurred controversy. Containership lines in the Atlantic, not satisfied with sharing only space among themselves, want to form an entity, the Trans-Atlantic Agreement, unprecedented in its cartel-like powers. In essence, it seeks to prohibit independent market responses by members, both "conference" and "non-conference," in order to attain overall stability in the volatile North Atlantic trade, where carriers have been losing money by the shipload. It is being scrutinized by the Federal Maritime Commission, which seems to favor it, and by the Justice Department, which deplores it.

Here's the crux: are these new entities truly "discussion groups," as the carriers assert, or anti-competitive price-fixing schemes? Hiroshi Takahashi, senior managing director of NYK Line, has asserted that there are "many misunderstandings of TAA. It is a general discussion group, not a rate-fixing group." The Justice Department, however, recently stated that if TAA rules prohibit members from acting independently to bring more capacity into a trade, then it amounted to the same thing as denying the right of independent action on rates. Ocean shipping is a complex business, but fundamental economic principles still apply—a reduction in supply serves to increase prices. To shippers, it seems disingenuous, at best, for carriers to maintain that groups like TAA are not rate-setting groups.

The Carriers' Case

Carriers, however, can make a strong contrary case. They are making a financial sacrifice to pull expensive vessels from well-trafficked but overtonnaged trade lanes. Many shippers have long complained that carriers need to do a better job of policing themselves. Groups like TAA may be their most effective approach. And few shippers could argue that services are worse than they

continued

were 10 years ago. In fact, the opposite is true. According to Ron Gottshall, managing director of the Transpacific Westbound Rate Agreement, shippers rarely have much concern for the well-being of their carriers. "The rates they argue about represent a piece of their overall business costs, but those rates represent 100 percent of a carrier's revenue," he says. Without remunerative rates, further service enhancements may be impossible.

But are further enhancements needed? The industry seems to be at a crossroads. While ocean carriers rationalize space and streamline costs on the ocean side, landside costs of intermodal connections, terminals, etc. continue to soar. American President Companies, for example, struggles to achieve profitability in its extensive domestic network, while its ocean operations hum more smoothly than ever. Other carriers have trimmed back their intermodal commitments, concentrating only on the most surefire lanes. But according to NYK's Takahashi, a multi-modal network is still the best bet for carriers. "Carriers that want to prosper must penetrate further inland," he believes. He expects to see rationalization of intermodal doublestack service that mirrors what's happening on the water.

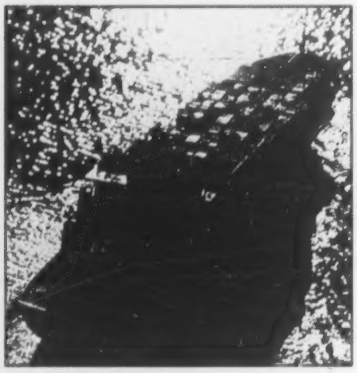
But Conrad Everhard, president of Cho Yang USA, a fast-growing independent line, disagrees. He thinks that during the remainder of this century, carriers will refocus on the core business, namely port-to-port service, and forego further investment in intermodal extras. "Today, I can buy space on any train I want," he says. "Why would I buy the equipment?" Nor does he believe that shippers will opt for giving all their freight to a single ocean carrier that promises one-stop shopping. "The only free cheese is in a mousetrap," says Everhard. "Sooner or later the shipper will feel trapped."

Unlike Takahashi, Everhard believes that the future is almost gener-

continued

CARRIERS PROMPT NEW MARITIME POLICY

The American flag will apparently remain flying on U.S. merchant ships, thanks to a maritime reform policy package recently concocted in Washington. Without it, U.S. liners may have "flagged out," to avoid federal rules that prevented acquisition of newer cost-effective ships abroad. Although Transportation Secretary Andrew Card got credit for pushing the package up Capitol Hill and through the White House, it was the concerted effort of the nation's two largest carriers, Sea-Land Services and American President Lines, which spurred action after decades of stagnation.



By declaring that the merchant fleet was "in a state of orderly liquidation," the theif executives of APL's and Sea-Land's parent companies struck the right cord of desperation. And although they have doubts about many aspects of the package that Card was able to assemble in record Washington time, they are pleased that something's on the table. "We're flexible as to precisely how this should be done," APL's John Lillie and CSX's John Snow said at Capitol Hill hearings. "We're confident there is a range of workable solutions," they said. Congress will consider the new policy later this year.

Under the new program operating subsidies will be allowed to expire. These are federal payments made to U.S. carriers to offset the higher costs of using U.S. labor aboard ships. That's been a requirement due to wartime concerns, when merchant ships (and crews) are required for military support. Contingency retainer payments (CRP) would replace current subsidies. In exchange for these funds, U.S. flag operators would be required to provide their ships in times of war.

Under this form of subsidy, U.S. liners would be allowed to use federal Capital Construction Fund monies to acquire foreign-built ships. The plan seems to parallel the business world's trend toward globalization. ■

TOP 40 SHIP LINES

Container Traffic Through U.S. Ports, 1991 vs. 1990

International Freight in 20-Foot Container Equivalents, or TEUs

	1991 Full Yr. Imports + Exports	1990 Full Yr. Imports + Exports	Pct. Chg.	1991 4th Qtr. Imports + Exports	1990 4th Qtr. Imports + Exports	Pct. Chg.
1. Sea-Land Service	971,577	872,365	+11%	255,568	223,725	+14%
2. Evergreen Line	782,225	778,723	0%	206,913	193,071	+7%
3. American President	748,381	694,136	+8%	196,238	186,757	+5%
4. Maersk Line	693,360	691,423	0%	181,723	174,417	+4%
5. NYK Line	490,930	531,953	-8%	116,709	135,794	-14%
6. Orient Overseas	402,143	410,797	-2%	107,609	100,431	+7%
7. Hanjin Shipping	399,746	427,452	-6%	108,874	105,439	+3%
8. "K" Line	394,817	351,357	+12%	105,800	92,178	+15%
9. Mitsui OSK Line	360,691	329,981	+9%	104,854	89,377	+17%
10. China Ocean Ship	300,492	279,802	+7%	76,838	72,909	+5%
11. Hyundai Merchant	272,644	253,482	+8%	72,598	62,328	+16%
12. Yangming Marine	237,614	185,786	+28%	67,754	48,730	+39%
13. Hapag-Lloyd	224,882	235,384	-4%	53,565	60,948	-12%
14. Zim Container	196,678	197,749	-1%	52,884	49,971	+6%
15. Nedlloyd Lines	196,483	142,224	+38%	50,360	45,280	+11%
16. Lykes Lines	171,357	140,335	+22%	44,158	40,842	+8%
17. P&O Containers	155,782	160,481	-3%	42,367	42,624	-1%
18. Senator Line	154,805	106,031	+46%	45,266	24,040	+88%
19. Atlantic Container	153,274	158,232	-3%	36,887	41,741	-12%
20. Neptune Orient	138,965	138,189	+1%	42,221	34,949	+21%
21. Polish Ocean	132,005	115,055	+15%	35,215	32,789	+7%
22. American Transport	102,161	105,265	-3%	25,478	24,820	+3%
23. Dole Fresh Fruit	88,380	76,787	+15%	24,585	20,878	+18%
24. Cho Yang Line	80,304	0	+**%	29,732	0	+**%
25. CGM French Line	79,142	63,568	+24%	19,912	17,145	+16%
26. Columbus Line	76,039	72,825	+4%	20,104	18,058	+11%
27. Tropical Shipping	72,569	70,532	+3%	19,671	18,206	+8%
28. Great White Fl.	68,008	40,463	+68%	14,365	13,793	+4%
29. Mediterr. Shipping	67,669	64,880	+4%	19,427	15,633	+24%
30. Trailer Marine	66,389	64,227	+3%	18,025	16,806	+7%
31. Crowley Caribbean	66,141	71,598	-8%	19,637	15,884	+24%
32. Mexican Line	65,875	91,636	-28%	16,064	22,132	-27%
33. Westwood Ship'g	65,049	41,754	+56%	17,389	11,729	+48%
34. Seaboard Marine	56,450	42,055	+34%	16,270	10,989	+48%
35. Ivaran Lines	50,142	37,637	+33%	15,498	11,632	+33%
36. EAC Line	46,651	45,353	+3%	12,088	10,454	+16%
37. United Arab Ship'g	45,690	37,280	+23%	13,493	9,182	+47%
38. Farrell Line	45,626	47,329	-4%	12,456	10,031	+24%
39. Navieras P. Rico	43,466	41,333	+5%	11,984	10,208	+17%
40. Italian Line	42,668	46,194	-8%	11,393	12,440	-8%
TOTAL	9,907,769	9,402,387	+5%	2,633,360	2,414,229	+9%

+**% Percent increase is very large.

Notes: Percentages of change are calculated before rounding. The final total includes lines not shown with smaller 1991 tallies. Affiliated or predecessor companies have been included in the figures for Atlantic Container Line, Contship, Dole Fresh Fruit, Great White Fleet, P&O Containers, NYK Line and Wilhelmsen Lines. Trends and rankings based on physical volume may differ greatly from trends and rankings based on revenue or profits.

Source: Data from manifests and bills of lading compiled by PIERS, Port Import/Export Reporting Service, New York. Cargo carried for most military shippers is excluded from the tabulation as required by law. Empty containers are excluded, as is domestic cargo, such as freight transhipped from another U.S. port as part of an international movement.

SOURCE: PIERS/Journal of Commerce

is they are offering shippers, we've compiled an extensive, thought not exhaustive, matrix (see pages 64-67). The matrix displays the breadth of contract logistics services, from freight payment processing through complete transportation and distribution outsourcing. It by no means indicates the full extent of services offered by these companies; it does attempt to clarify their areas of expertise, and separate asset-based vendors from those offering purely management services. Bear in mind that the information contained comes from the companies themselves, in response to basic queries. This is how these vendors view themselves.

Many traffic people assume that the main goal of outsourcing logistics is to cut the corporate payroll. They are not wrong. "You should have seen the number of resumes that crossed my desk last year from traffic people who lost their jobs," says Paul White, vice president, sales and marketing, for third party vendor F. H. Traper. Corporate belt-tightening has thinned the ranks of traffic professionals. White says that "It may take a company a year or two to realize that it wasn't such a hot idea." In the meantime, third parties position themselves to fill the void.

Many logistics professionals, who have seen the writing on the wall, are voluntarily switching from their corporate jobs to positions within the growing third party market (see sidebar on LogiCorp, pg. 61). White believes this exodus will continue as companies whittle traffic departments and shift logistics purchasing decisions to accounting and finance departments. "When we started in this business," he notes, "about 70 percent of our calls were with the transportation manager. Now the majority of the time we're calling on finance and accounting."

If that trend continues, it is obvious that companies will increasingly turn to outside vendors to provide greater logistical expertise. "This industry has definitely turned the corner," White maintains. "There's no going back." ■

Information-based Third Party Logistics Vendors

F.H. Traper & Numerax **(908) 602-7231**	Both are subsidiaries of privately held Strategic Technologies, Inc.	Consumer Products, pharmaceutical, automotive, electronics, forest products, chemicals, manufacturing	F.H. Traper provides freight payment, auditing and rating, database mgmt, custom mgmt reporting and logistics consulting. Numerax offers dial-up access to various rate information databases	Computer systems
Bank of Boston **(617) 270-3301**	Freight Mgmt Services Division is a subsidiary of the Bank of Boston	Manufacturing, retailing, distribution, financial institutions, service firms	Customized freight bill processing & payment, mgmt reporting	Computer hardware & software, both owned and leased
Cass Logistics **(314) 621-4121**	Cass Commercial Corp., publicly owned	900 manufacturing, wholesale and retail clients	Provides data mgmt, accounting, auditing & payment systems, freight rate mgmt, shipment planning. Also provides rate software for rail and truck carriers. Provides billing & collection for third party vendors.	Information systems
KLS Logistics Services **(510) 847-1800**	Owned by ACF Industries; spun off from Kaiser Aluminum &Chemical Co. in 1987	Metals, aerospace, food, chemicals, heavy manufacturing, furniture	Freight payment, rate & contract negotiating, railcar fleet mgmt, material handling design and implementation, inventory control systems, private fleet analysis & mgmt.	computer software and hardware

Operations-based Third Party Logistics Vendors

Company Name	Source Entity	Industries Served	Services	Owned Assets
Business Logistics Services **(901) 395-3891**	A division of Federal Express, spun off from PartsBank	Computer equipment, electronics, medical, automotive, aerospace, fashion	Information systems, order processing, warehousing, quality assurance, inventory control, transportation, credit & collection, technical support, repair, customer service	Leased facilities in Amsterdam, U.K., Singapore, Atlanta, Chicago, San Jose, Newark and Memphis. Uses Fed Ex linehaul system or contracts for surface and air transportation.
CSX Sea-Land Logistics **(703) 739-4852**	A subsidiary of CSX Corporation	Chemicals, paper, retailing, consumer products, beverage, construction	Consolidation, inventory mgmt, direct store delivery, logistics pipeline mgmt, bulk intermodal transfer, JIT distribution, network and asset rationalization	Longest rail network in the U.S., the world's largest shipping line and the nation's longest inland barge operation.
CTI Inc. **(904) 721-2104**	Subsidiary of Baronial Transportation Corp., an affiliate of CSX Corp.	Retail, pharmaceutical, chemical, building materials, furniture, appliances, food, automotive	JIT, flow-through and contract warehousing, cross-docking, bar coding, contract carriage, packaging, logistics engineering, quality inspection, sequencing, kitting, accesorizing, Quick Response, unattended delivery, home delivery	500 tractors (95% leased), 750 trailers (95% owned), 15 warehouses (100% leased), 85 forklift trucks (100% leased)
Livingston Contract Distribution **(416) 626-2828**	Subsidiary of Livingston Distribution Centres, a Canadian public DCnetwork	grocery mfrs and retailers, pharmaceutical & health care, consumer goods, government	Central & regional DC operation, cross-docking, kitting, local pickup & delivery, consolidation, small package handling & repacking, EDI, invoice preparation, lot/expiry date control & tracking	Facilities (5 owned, 23 leased), tractors (23 owned, 1 leased), tr-ailers (78 owned, 3 leased), trucks (39 owned, 1 leased, service trucks (6 owned, 1 leased)
Nedlloyd Districenters **(201) 617-9509**	Subsidiary of Dutch-based Royal Nedlloyd Group, N.V.	Healthcare, electronics, computers, food, automotive, high-value consumer goods	Inventory mgmt, invoicing, insurance, pick/pack, quality control, labeling, collections, legal counsel, temperature control, light assembly, repacking	32 owned Districenters, 10,000 trucks (Royal Nedlloyd Cargo Int'l); 44 ships (Nedlloyd Lines)
Roadway Logistics Systems **(216) 784-1600**	Subsidiary of Roadway Services, Inc.	Automotive, heavy construction, lawn & garden mfg, lighting, glass, automated teller machines, small motor industry, retailing	Route and mode optimization, sequencing, subassembly, labeling, packaging, kitting, capital assumption, warehousing, cross-docking, consolidations, logistics forecasting, auditing & claims processing, carrier mgmt, EDI	Parent is one of the largest LTL carriers in the nation with a huge truck fleet and terminal network nationwide. ROLS also has current contracts with 120 other carriers in all modes.
Skyway Freight Systems **(408) 722-3133**	Union Pacific Corp. is a majority shareholder	High-tech manufacturers & distributors, retail, pharmaceuticals, manufacturing	Kitting, subassembly, localization, quality testing, fulfillment, warehousing & inventory mgmt, supply chain mgmt, JIT deliveries, logistics network design & mgmt, multimodal transportation	20 logistics centers nationwide, 400 trucks/trailers
TNT Contract Logistics/ TNT Nationwide Logistics **(708) 913-7799**	Both are wholly owned subsidiaries of TNT Freightways Corp.	Contract Logistics : retail Quick Response and medical support. Nationwide Logistics: vertical transportation mgmt, from production through final distribution..	Dedicated transportation systems, cross-dock warehouses, kitting, subassembly, inventory mgmt, freight subcontracting and payment	Transportation assets are primarily owned, warehouse assets primarily leased. Numbers are proprietary. Operations in North America, Europe, U.K., Australia and Asia.

Operations-based Third Party Logistics Vendors

Company Name	Source Entity	Industries Served	Services	Owned Assets
The Unit Companies **(904) 396-2517**	Acquired by GATX Corp. in 1989	Automotive, consumer electronics, grocery, HBA, industrial equipment, major appliances, pharmaceuticals	Warehousing, distribution planning, contract labor, invoicing, FTZ, inventory mgmt, hazmat, fulfillment, pick & pack, return goods, subassembly, sequencing, packaging, inspection & testing, JIT, route & load planning, fleet mgmt, consolidations, EDI	131 DCs totaling 21 million sq. ft. nationwide, mostly leased; 200 tractors, 300 trailers, mostly leased.
USCO Distribution Services **(203) 597-5300**	Spun off from Uniroyal in 1986	Healthcare, pharmaceutical, electronics, fulfillment, retail, paper	Warehousing, pick & pack, export, return & repair (electronics), light assembly, packaging, telemarketing, order entry, credit & account receivables, contract labor	55 facilities, mostly leased
Innovative Logistics **(800) 367-4544**	Carolina Freight Corp.	(in existence for three months)	Import/export, carrier selection, rate negotiation, consolidation, warehousing, information services, TL & FCL booking	IBM AS/400 computer
Trammell Crow Distribution **(214) 416-9203**	Trammell Crow Co.	Consumer products, petrochemical, industrial paper	Bulk-to-bulk transfers, packaging	5 million sq. ft. of warehousing space, material handling equipment. Both are 50/50 owned/leased.
Exel Logistics **(614) 890-1730**	National Freight Consortium (U.K.)	Consumer products, retail, industrial, business services, healthcare	LTL consolidation, TL, EDI, pool distribution, packaging, customized systems packages, pallet display building, pick & pack, JIT, trailer drop, temperature-controlled space, auditing	13 million sq. ft of warehouse space (about 25% owned), 600 vehicles (80% owned)
Burnham Service Co. **(404) 563-1120**	Burnham Service Corp.	Parts/supply distribution, furniture consolidation, used equipment/parts retrieval/scrap	Finished goods distribution (received offshore for North American distribution), spare parts fulfillment, consolidation/merge, installation & assembly, PC configuration	950 tractors (90% owned), 1,200 trailers; 300 straight trucks, 80 leased warehouses (7.5 million sq. ft.), mainframe computer
Fritz Integrated Logistics **(404) 767-3010**	Fritz Cos., privately held	Retail, manufacturing, computers, petroleum	Global logistics mgmt, warehousing, inventory control, pick & pack, forwarding, customs brokerage	4 million sq. ft. of warehouse space worldwide, information systems
Menlo Logistics **(415) 327-1693**	Consolidated Freightways, Inc.	Chemicals, automotive, electronics, consumer products, furniture, apparel, retailing	Integrated logistics mgmt, order processing, inventory mgmt, traffic, fleet & warehouse mgmt, cross-docking, sequencing, kitting, subassembly, receiving	Dedicated contract warehousing and contract carriage
Caterpillar Logistics Services **(309) 675-8501**	Subsidiary of Caterpillar, Inc.	Automotive, industrial, electronics	Inventory mgmt, material tracking, multimodal transportation, consolidation, cross-docking, redistribution, warehousing, contract labor & mgmt, consulting	7 leased DCs dedicated to CLS, access to 23 Cat-owned facilities nationwide, totaling 11 million sq. ft. of space
LogiCorp **(313) 737-8340**	Privately held; originally a subsidiary of Rockwell International	Primarily automotive and heavy truck	Logistics engineering & mgmt, design, coordination and implementation of cost-effective logistics solutions	Information systems

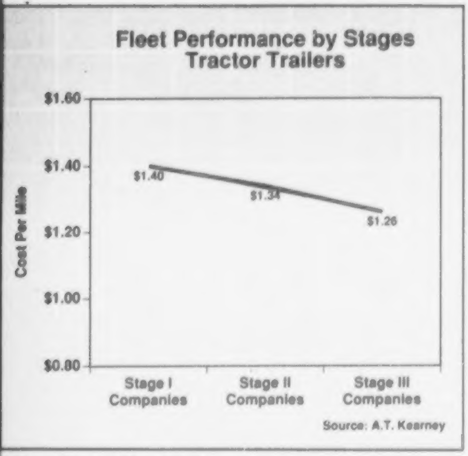
Operations-based Third Party Logistics Vendors

Company Name	Source Entity	Industries Served	Services	Owned Assets
American Distribution Systems, Inc. **(313) 681-5800**	Privately held	Publishing, specialty & general retailing, grocery, pharmaceutical, point-of-purchase merchandising	Specialists in catalog and sample distribution, inter-store transfer, direct store delivery, point-of-purchase logistics planning, warehousing, package design, order entry/processing, fulfillment, auditing, local pickup & delivery, in-store labor	Sold all trucks and warehouses in 1987, so as not to "prejudice" service planning, Contracts with more than 800 vendors for services.
Tower Group Int'l **(212) 512-4453**	Subsidiary of McGraw-Hill, Inc.	automotive, apparel, wine & spirits, metals, footwear, retail, electronics, computers	Import mgmt, data processing mgmt, international distribution, customs compliance, JIT	Computer hardware and software
C.H. Robinson **(612) 937-7895**	C.H. Robinson, Inc. (100% employee-owned)	Essentially a freight forwarder, serving a vast array of businesses in North America and Europe	Mgmt of domestic & intl multimodal transportation, LTL consolidation & distribution through nationwide hubs, mgmt of time-sensitive inbound/outbound projects, freight payment & auditing	Expansive computer system; all transportation is provided under contract. Owns no equipment.
INTRAL Corp. **(617) 439-5880**	Employee-owned; spun off from the Gillette Co. in 1987	Supports U.S. multinationals handling finished goods, raw materials, components, equipment and spares; exports and imports	Independent, shipper-oriented international logistics mgmt, emphasizing total mgmt of the global supply chain.	Computer hardware and software
Kenco Group **(615) 624-9793**	Affiliated with Cherokee Warehouses, Inc., privately held	Medical supplies, pharmaceuticals, plastics, textiles, appliances, electronics	Logistics planning systems, repackaging, repair, pick & pack, site optimization, automated handling systems design & installation, radio frequency bar coding, building design, storage layout	Information systems, material handling equipment, personnel; leases three warehouses and 63 trucks. Operates 18 facilities and 66 trucks leased by clients
Ryder Distribution Resources **(305) 593-3897**	Subsidiary of Ryder System, Inc.	Manufacturers, wholesalers and retailers in automotive, parts, food, textiles, paper, rubber, plastics, machinery, hardware, and department stores	JIT, Quick Response, IB/OB transportation, logistics system design & implementation, distribution planning & mgmt, product planning, inventory mgmt, driver services, receiving, warehousing, cross-docking, subassembly, packaging, home delivery & installation, freight brokerage, intermodal	6,100 vehicles dedicated to contract customers, 336 locations
AMR Distribution Services **(817) 963-1469**	Subsidiary of AMR Corp. (parent of American Airlines)	Building materials, apparel, footwear, forest products, plastics, paper, aircraft parts, computers	LTL consolidation & distribution, TL & flatbed, import/export--air & ocean, cross-dock warehousing, contract warehousing, consulting, systems support, order fulfillment, subassembly	Warehouses in Dallas/Ft. Worth, San Juan & Seattle. 55 P&D vehicles. All warehouses are leased, all trucks are owned.
Yellow Logistics Services **(913) 344-5561**	Subsidiary of Yellow Freight System, Inc. of Delaware	Electronics, retail/apparel, chemical, automotive	Single-source logistics mgmt, production scheduling, return goods processing, warehousing, packaging, distribution & consolidation, information services, transportation and consulting	Information systems

Service is King For Private Fleets

If private fleets are to survive tighter and tighter. management scutiny, they must improve cost and performance levels, but especially customer service.

By Thomas A. Foster, Editorial Director



Source: A.T. Kearney

The best fleets have 11 percent lower costs per mile.

Few business people—even logistics professionals—realize how vital private fleets are to U.S. business. Private fleets handle the vast majority of local shipments (within 50 miles of a city), and they carry approximately one third of all non-local and intercity freight, regardless of mode. The value of this non-local transportation alone is $89 billion, which is more than the value of all other services combined.

Despite the impressive numbers, the future of private fleets has never been under more scrutiny by management.

"From my company's point of view, common and contract carriage are the best means of moving our freight," says Lou Paoli, transportation logistics manager for Schwinn Cycling and Fitness Co. in Chicago, Ill. "Private carriage is not even a consideration."

Cost effectiveness is the only issue for some companies, but the question of whether or not to have a fleet is far more complex for others.

"We currently use private carriage where it is economically advantageous such as inbound bulk short haul, or for specific service requirements," says James Terry, manager of corporate transportation for Owens-Corning Fiberglas in Toledo, Ohio. "The purpose of our private carriage is not to grow, but rather to fill certain voids in the normal conduct of business."

Increasingly, top managements evaluating the need for private fleets want to know if the fleet is serving customers efficiently, cost-effectively and productively.

To provide answers to these and other questions about the role of private fleets in U.S. business today, the National Private Truck Council commissioned consultants with A.T. Kearney to conduct a study of 251 of its members called *Private Fleet Benchmarks of Quality and Productivity—1991*.

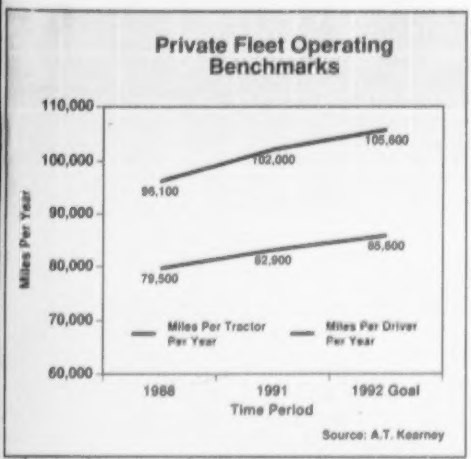
As might be expected, the study highlights the ambiguous attitudes companies have about maintaining a private fleet. For example, tractor trailer fleets, 30 percent of the companies in the study, have dropped in size since 1988, and 22 percent carry a smaller share of company outbound traffic. On the other hand, many fleets have also grown and captured larger portions of the freight. In fact, respondents to the NPTC/Kearney Study report:

1. A 12 percent average projected growth in tractor trailer fleet size from 1988 to 1994

2. A net increase in the portion of inbound and outbound freight handled by the fleet. One third of the private fleets handled 80 to 100 percent of the companies' outbound freight

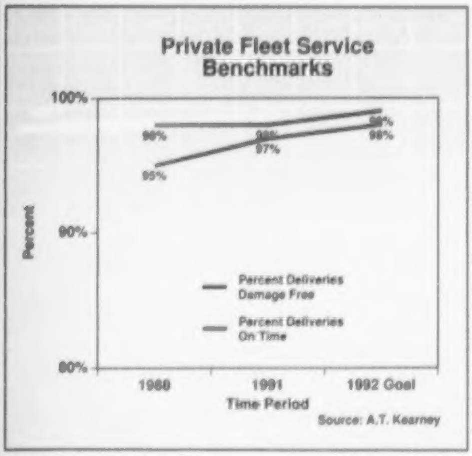
3. A favorable average operating cost of $1.43 for tractor trailers in 1991 compared to $1.47 in 1985 (adjusted for inflation)

4. Fleets increasingly are involved in more than moving companies' goods, but also participate in intercorporate hauling (64 percent), contract carriage (50 percent) and common carriage (18 percent) for out-



Source: A.T. Kearney

Fleets have ambitious goals for tractor and driver miles.



Source: A.T. Kearney

Delivery and damage standards must meet or exceed for-hire carriers.

side shippers; and 28 percent operated as separate companies or transportation subsidiaries.

The study also shows that fleets are holding the line on costs. Tractor trailer fleets average 96,200 miles per tractor and 78,300 miles per driver. Tractors averaged 3.5 years old and got 6.1 miles per gallon.

The study shows that private fleet non-union drivers earn 29 cents per mile and team drivers earn 16 cents. These wages did not differ significatnly from union and leased driver rates.

But probably the most significant finding in the study was an overwhelming recognition of quality and service as a critical mission factor for the fleet.

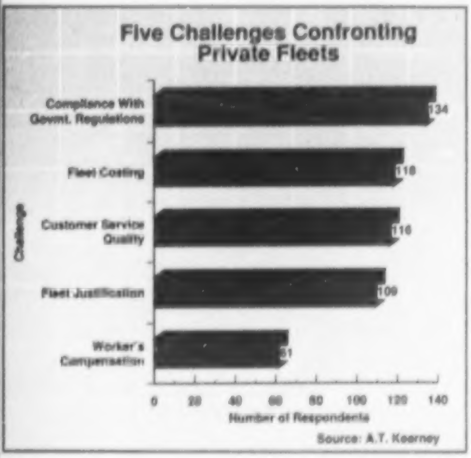
Of the five main reasons for having a private fleet, the top answer given by 92 percent of the respondents was service reliability to customers. The second most critical reason given was responsiveness to customers' short order cycle times. The third reason for having a fleet was maintaining direct contact with the customer (53 percent). Only two of the top three reasons were not directly related to customer service: lower cost versus the alternatives (50 percent) and the need for JIT material control (47 percent).

"Today, service is king," says Michael Lipman, the principal at A.T. Kearney who headed up the study. "Customers demand responsive quality service from their suppliers with the same fervor as they demand product quality. On-time performance isn't a service differentiator, it's a basic requirement. Despite these shifts, cost performance, the key measures of the 1980s, still hangs over the fleet like a sword on a thread. If the fleet can't perform, 'we'll find someone who can' is management's motto, and an increasing range of alternatives exist."

continued

STAGES OF TRANSPORTATION EXCELLENCE

Dimension	Stage I	Stage II	Stage III
Role of fleet	• "Always done it this way"	• Lower costs • Better control	• Strategic advantage • Service
Resource Utilization	• "40 hours" mentality • No training • Part-time management • Simplistic measures	• Round-trip planning • Measure empty miles • Track utilization • Incentive programs	• Continuous movement planning • Backhaul marketing program • Satellite tracking
Cost control	• Incomplete scope/ accountability • Gross levels • "Lump sum" budget based on historical	• Broad scope • Line item budgets based on historical	• "Should cost" estimates • Budgets built up by specific activity levels • Costs by type of operation
Service goal setting	• No service goals • React to "noise level"	• Internally set service goals • Outbound orientation • No program to measure/improve	• Service goals based on customers' requirements • Formal program to measure/improve • Inbound/outbound orientation
Measurement approach	• No measures • Gross budget • No database/ formal collection process	• Measure actual • Variance budget versus actual • Detail at category level, semiautomated	• Measures versus budget and standards • Use to identify problems, reasons for low performance • Exception reports • Database/inquiry



Source: A.T. Kearney

Customer service is a concern, but fleets are bogged down with operating matters.

Lipman says this focus on customer service requires the introduction of the quality process, benchmarking and continuous improvement. One aspect of the study was to see how well established these practices were in private fleet management.

"We wanted to see how private fleets were performing, what levels of performance are possible and how fleets can reach these high performance levels," says Lipman.

Based on the performance levels reported in the survey, A.T. Kearney divided the fleets into three stages that reflected levels of sophistication (see box, page 69).

The least sophisticated fleets (40 percent) are in stage I, average companies (52 percent) are in stage II, and the most advanced (8 percent) are in stage III.

For example, a stage III company fleet has empty miles accounting for 40 percent of the total, while stage II fleets have only 4 percent empty miles. In terms of cost per mile, stage I tractor trailer fleets reported costs of $1.40, stage II $1.34 and stage III only $1.26.

The benefit of advancing performance levels of a fleet from a stage I to a stage III are significant. For example, Lipman says companies that are able to make this move will enjoy a 5 percent improvement in total miles, a 17 percent improvement in number of drivers needed, a 12 percent reduction in trailers and a 22 percent reduction in the number of tractors needed to complete the fleet's mission.

The study lists 20 "high-impact actions" fleets can take to move up the stage ladder:

1. Tie pay programs to productivity
2. Use extra board
3. Install trip recorders
4. Use incentive programs
5. Consolidate outbound shipments
6. Establish scheduled delivery appointments
7. Increase delivery size, weight or density
8. Preschedule deliveries into specific market areas
9. Call customers in advance concerning change in pickup and delivery schedules
10. Use computer-assisted routing and scheduling programs
11. Use specialized material handling equipment
12. Use specialized trailers
13. Improve maintenance effectiveness
14. Measure compliance with required PM schedules
15. Establish fleet service performance standards
16. Measure service performance
17. Develop a thorough fleet budget
18. Compare fleet costs with equivalent for-hire carriage
19. Develop benchmarks to improve performance
20. Have a formal quality and productivity process. ■

For more information on the A.T. Kearney/NPTC study, contact NPTC at (703) 683-1300.

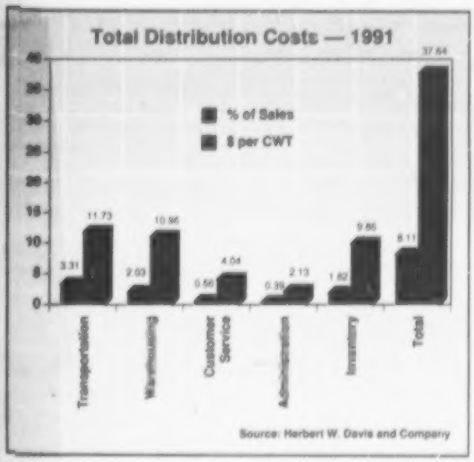
Challenges Confronting Private Fleets
(In order of importance)

1. Compliance with government regulations
2. Fleet costing
3. Customer service quality
4. Fleet justification
5. Workers' compensation
6. On-time deliveries
7. Driver availability
8. Maintenance of trucks
9. Computers and technology
10. Hazardous materials regulations
11. Hours of service
12. Driver training
13. Lack of state tax uniformity
14. Drug and alcohol abuse training
15. Uniform safety regulations
16. Labor relations and law
17. Road congestion and road conditions
18. State tax issues
19. Intrastate economic regulation
20. Alternative fuels
21. Vehicle inspections
22. Deregulation/reregulation reforms
23. Federal tax issues
24. Local truck restrictions
25. Reasonable vehicle access

A Higher Price Tag For Distribution

Distribution costs rose almost 11 percent last year. The message is clear: the easy cuts have been made. For meaningful new gains, shippers must get creative.

By Thomas A. Foster, Editorial Director



Source: Herbert W. Davis and Company

Distribution costs last year rose 10.8 percent from 1990 levels.

Ask any logistics manager what his boss focuses on and it's bound to be lowering distribution costs. Unfortunately, few major shippers in the U.S. during the last year have succeeded in lowering these costs, according to the Davis Database, which tracks such costs for 300 large U.S. manufacturers, wholesalers and retailers. The Database has been compiled for 30 years by the consulting firm of Herbert W. Davis Co. of Englewood Cliffs, N.J.

The average company in the Database had distribution costs in 1991 of 8.18 percent of sales, which is 10.8 percent higher than distribution costs in 1990. All elements of these distribution costs went up. Transportation costs went up 5.6 percent, and warehousing costs climbed a whopping 17 percent from the previous year.

William Drumm, president of the New Jersey consulting firm, says the great emphasis that has surrounded distribution cost control in recent years has created a point of diminishing returns.

"Traditional ways to find savings, such as bigger transportation discounts and reducing staff, are not working anymore," says Drumm. "We have reached a plateau for the easy cost cutting."

He points out that there is another, non-distribution related reason for climbing costs: Relatively few companies have been able to take price increases for their products in the last year or so, yet costs of all types continue to creep up.

"If you just look at distribution costs as a percent of sales, naturally this percentage has gone up if your costs rise but your prices don't," Drumm says. This is especially true for clothing, appliances and other durable goods where consumers have become more price sensitive.

A fairer way to measure internal distribution cost performance is cost per hundredweight (CWT), which in 1991 was $43.32 for the average company in the Database. "These costs actually went down a little bit in 1991," says Drumm.

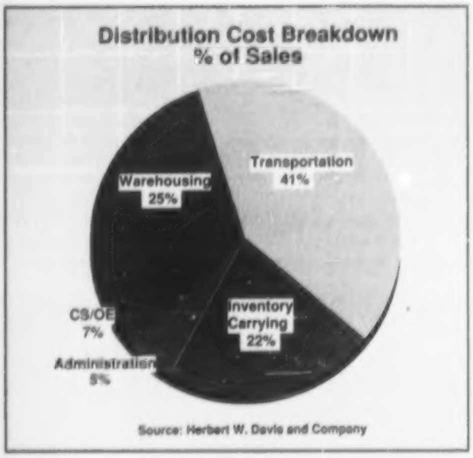
Measuring distribution costs in terms of dollars per hundredweight is a good measure of cost efficiency and distribution productivity because it takes into account proper utilization of warehouse space, labor appropriation, transportation rates and discounts, minimum inventory levels and maximum inventory turns. Nevertheless, dollars per CWT is less comparable between companies than the directly budgeted measure, costs per sales dollar. "Shippers want to benchmark themselves against other companies, and distribution costs as a percent of sales is the best number for this purpose."

Drumm says the main value of the the Davis Database is that it provides 30 years of benchmark numbers based on companies that collect their costs in a standard way.

Here are the key 1991 distribution costs measured both ways:

Transportation costs were $13.25 per CWT or 3.31 percent of sales. Warehousing was $12.07 per CWT or 2.08 percent of sales. Inventory car-

continued



Source: Herbert W. Davis and Company

Transportation and warehousing account for two-thirds of distribution costs.

rying costs were $11.75 per CWT or 1.98 percent of sales. Customer service and order entry costs were $4.75 per CWT or 0.63 percent of sales. Administration costs were $2.13 per hundredweight, or 3.8 percent of sales. (see page 77 for definitions).

The largest single element of distribution costs is transportation, which accounts for 41 percent of the total. Warehousing is the second highest cost element, with 25 percent. Inventory carrying cost is third with 22 percent. Customer service and order entry account for 7 percent and administration is 5 percent.

Strong Central Tendencies

Drumm says there is surprisingly little variability in the data, even between industries with vast differences in product value, distribution characteristics and types of delivery systems.

"Distribution costs tend to center around the averages," says Drumm. "So, whether you produce refrigerators, canned tomatoes, paper clips or air compressors, your costs should look pretty much like those in the Database. This means that companies that say they are different are probably fooling themselves."

However, Drumm says there is a wider dispersion within each product group than between groups. "For any 10 companies in the Database, all producing similar products, there is almost always a wide variation in distribution costs – wide enough to look for assignable causes rather than to dismiss the differences," he says. "For example, we see that the average manufacturer of temperature-controlled food has costs of 8.36 percent of sales. Fully 25 percent of those companies operate at less than 5.9 percent, while another 25 percent spend 13.69 percent or more of sales revenue. These differences are worth investigating. There are going to be important reasons why some companies can ship similar products to the same customers for less than half the cost of other, higher cost companies. The stability of the Database would indicate that the trouble lies with the shipper, not with the accuracy of the Database."

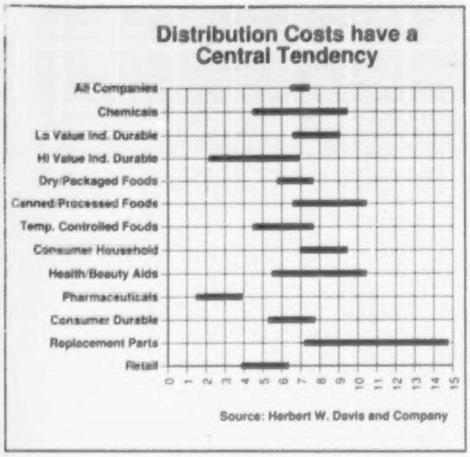
This variability in costs between companies in the same industry has tremendous bottom line impact, Drumm says.

"It is not unusual for there to be a 4 percentage point difference in total distribution costs from the worst performer to the best performer in any industry," he says. "In the health

Distribution Cost in the U.S.

The 1991 Physical Distribution Cost Database includes a large cross-section of American industry. The following chart shows these costs for a number of categories in our analysis:

	INDUSTRY	VALUE			VOLUME			SIZE		
	All U.S. Companies	Average Sales			Total Weight Shipped			Total Revenue		
Percent of Annual Sales	Average	Low	Medium	High	Low	Medium	High	Small	Medium	Large
Transportation	3.31	4.47	3.13	1.47	2.68	3.31	4.00	3.57	3.27	3.24
Warehousing	2.08	2.10	1.87	1.47	2.00	1.96	1.77	2.34	1.83	1.47
Order Processing	0.63	0.26	0.71	0.61	0.79	0.54	0.23	0.70	0.58	0.23
Administration	0.38	0.24	0.39	0.33	0.34	0.39	0.23	0.36	0.38	0.20
Inventory Carrying	1.98	1.68	1.66	1.82	1.92	1.88	1.36	2.13	1.53	1.45
Other Costs	0.57	0.19	0.30	1.12	1.12	0.31	0.20	1.04	0.29	0.24
Total Costs	8.18	8.64	7.60	5.51	7.43	8.00	7.47	8.74	7.53	6.45
Cost per Hundredweight										
Transportation	13.25	4.02	10.77	30.40	22.76	9.78	4.04	12.36	15.10	6.73
Warehousing	12.07	2.00	6.88	36.66	27.03	5.78	1.92	13.34	13.24	4.75
Order Processing	4.75	0.25	2.93	11.89	8.28	2.83	0.25	4.16	4.17	2.78
Administration	2.78	0.25	1.61	10.78	6.40	1.81	0.27	2.15	4.18	0.97
Inventory Carrying	11.75	1.75	6.26	37.53	25.99	7.08	1.69	13.64	11.18	6.42
Other Costs	6.03	0.13	1.49	25.15	25.15	1.65	0.31	24.41	1.65	0.36
Total Costs	43.32	8.17	27.77	122.50	86.77	26.85	8.06	43.82	47.29	20.80



Source: Herbert W. Davis and Company

There is little difference in distribution costs between industries, yet there can be wide variations within industries.

and beauty aids industry this four percent is about the total profit margin for the industry, so high distribution costs can be the difference between making a profit or a loss."

Drumm also points out that large companies do not necessarily have a significant cost advantage over smaller shippers. The smallest companies in the Database (under $200 million) spend a larger percentage of their revenues on distribution than the others (8.84 percent of sales). However, this economy of scale levels off between $500 million and $1 billion (6.36 percent of sales) with the largest companies paying slightly more (7.14 percent of sales) than the mid-size companies.

"Large companies that have a bureaucratic organization tend to lose control of what is happening," says Drumm. "Management control over a single entity becomes geometrically harder as the organization increases in size. However, we do not see this 'diseconomy of scale' in large companies that are set up as a series of entrepreneurial units, each with a great deal of independent control.

"Overall, company size does not seem to be a significant factor in cost levels," says Drumm. "This is especially interesting since it contradicts the major reason companies centralize transportation management—to take advantage of size."

Costs Over Time

Distribution costs have fluctuated greatly in the 30 years of the Davis Database. They hit their lowest point in the late 1960s and early 1970s. Drumm says this is attributable to two major events: the opening of the interstate highway system and the adoption of the physical distribution concept by U.S. industry.

Costs hit their highest point in the mid-to-late 1970s immediately after the Arab oil embargo. Interest rates

continued

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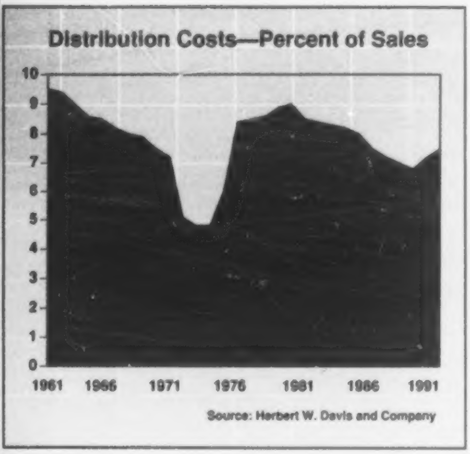
Distribution Costs—Percent of Sales

Source: Herbert W. Davis and Company

Two reasons distribution costs are rising: the easy cuts have been made, and companies have been unable to raise prices.

climbed, and so did labor costs.

Distribution costs fell during the 1980s as deregulation and technology enabled companies to get better control of distribution. But in the late 1980s and early 1990s, they have started to climb again.

Drumm lists four targets for shippers intent on improving their distribution costs and service in the 1990s:

- **Warehouse productivity.** Shippers must continue to upgrade their warehouses with automation, order picking systems and bar coded product tracking. But real productivity gains only come when these systems are successfully integrated.

"Only a handful of companies capture the potential of these systems by integrating with their suppliers, customers and carriers," Drumm says. "The current stand-alone systems cannot improve productivity throughout the supply chain."

- **Inventory productivity.** This is the area where shippers continue to make their biggest and most expensive mistakes, says Drumm. "If a company has a service problem, management makes a sweeping decision to add millions in new inventory," he says. "As soon as the problem goes away, another sweeping edict comes down to slash inventory. There is little understanding of how to manage inventories wisely, and this is the key to leveraging their entire system."

Shippers must develop tactical forecasting that is done at the middle management level weekly and daily, instead of the strategic forecasting that comes down annually or quarterly from top management. "The computer systems are there to allow this tactical forecasting and inventory management," Drumm says. "It is just a matter of management allowing the people who can best do the job take responsibility for it."

- **Number and location of warehouses.** Generally, companies should be seeking ways to have as few warehouse and distribution centers as possible. Drumm says there are often good reasons, such as competitive need to increase service or market share, to add warehouse locations. "Service can be increased dramatically with more stocking points, but this is an expensive strategy," he says.

The implication of fewer warehouses is that shippers will continue to reduce inventories and the number of stocking points by using more JIT, more Quick Response and, generally, more transportation.

While this reduces the amount of fixed costs in distribution, it increases the sensitivity of distribution to fluctuations in transportation costs, especially fuel prices.

"By the end of the decade, I think certain industries will have completely eliminated warehouse inventory," says Drumm. "Everything that is not in the stores will be in transit."

- **Customer service strategy.** Customer service levels measured by the Database have not changed in several years, according to Drumm. There has been no improvement in cycle times, fill rates or lead times. "That is because no changes are being made in the distribution systems that would boost customer service," says Drumm. "Tremendous opportunity exists but companies have to shorten manufacturing cycles, improve sales forecasting and invest in systems for DRP, order processing and Quick Response."

According to Drumm, shippers must look at the logistics system—including the links to suppliers and customers—to make the most meaningful progress. "Ask yourself two questions," says Drumm. "Do I have the right level of computerization to optimize my relationships with suppliers and customers? And, is there anything I can do to enhance or leverage my logistics relationship with customers and suppliers?"

In a nutshell, says Drumm, "if you haven't adjusted your distribution configuration, your computer systems and your links with your suppliers and customers in the last three or four years, you are probably not operating an optimum system. This is going to show up in your distribution costs, your service—and very quickly on the bottom line." ■

For more information. contact William Drumm, President, Herbert W. Davis and Co. Englewood Cliffs, NJ 201-871-1760

KEY COST COMPONENTS

The cost categories shown in the Davis Database analyses are defined as follows:

Transportation: The cost of both primary (point of manufacture to distribution center) and secondary (distribution center to customer) movement of finished goods. Because secondary movements are frequently LTL or other types of smaller shipments, this type of transportation traditionally costs about twice that of primary freight.

Warehousing: The cost of both plant and field warehouses, with labor comprising the highest element (about 55 percent), followed by space, direct materials, maintenance, etc.

Inventory: Carrying costs tied to the current value of materials located at any stage in the distribution pipeline. In 1989, the inventory figure was calculated on an 18 percent cost-to-carry basis.

Customer service: The cost of people, space, materials and equipment needed to take customer orders or handle customer inquiries.

Administration: People-associated costs for managers and planners in the distribution function. (Note: With the exception of warehousing, administration costs are separated from direct expenditures reflected in other cost categories. For example, the transportation category reflects the cost of the freight bill, but not of the people who manage transportation. The sales, benefits, portion of overhead, etc., associated with those people would be folded into administrative costs.)

AVERAGE DISTRIBUTION COST BY INDUSTRY

	% of Sales	$/CWT
All Companies	8.18%	$43.32
Industrial Non-Durable	7.42	27.77
Chemicals	7.22	6.79
Industrial Durable	8.05	67.88
Ind. Durable <$10/pound	9.80	36.10
Ind. Durable >$10/pound	6.57	94.36
Consumer Non-Durable	7.82	29.88
Grocery	7.97	19.59
Food and Beverages	8.31	8.03
Dry and Packaged Food	7.28	8.90
Canned and Processed Food	7.98	5.15
Temperature Controlled Food	8.36	9.22
Non-Food in Grocery Channel	7.25	37.45
Consumer Household Products	8.02	13.09
Health and Beauty Aids	6.85	59.03
Pharmaceuticals	5.83	77.65
Consumer Druable	6.93	28.32
Wholesalers	11.39	63.26
Retail Companies	5.39	86.15

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WAREHOUSING

A REVIEW FOR MANAGEMENT

A Stake in the Ground

That's what our current research on the warehousing market amounts to. We need better data, not only for the industry, but for our own operations as well.

By Jay Gordon, Executive Editor

> *"It is clear that we in business logistics do not know very much about warehousing costs."*
>
> ***Robert Delaney***
> ***Cass Logistics***

When Cass Logistics' Bob Delaney presented his research on the warehousing market to the Warehousing Education & Research Council this spring, he acknowledged that his efforts were "exploratory." With little time and resources, he was able to compile statistics for only half of the economy. "In this fast changing world, I am learning that it's necessary to make a continuing commitment to research in order to understand what's going on," Delaney said. "It is clear that we in business logistics do not know very much about warehousing costs." His findings, he said, are a "stake in the ground" that the industry can improve upon. A check of other resources, including the U.S. government, reveals no better information.

The fact that Delaney, one of this industry's best researchers, had a hard time putting together his warehousing presentation makes one wonder whether shippers find it equally difficult to pinpoint their warehousing costs. One public warehousing executive we spoke with recently said shippers increasingly ask for "open book" pricing arrangements, where the warehouser is expected to share specific cost data. "If they want to look at our costs, they need to know what a reasonable overhead is," this executive said. "One guy came in and said our overhead should be four or five percent. They just don't understand." He estimated that between 20 and 30 percent of the prospective customers they see don't know what they spend on warehousing. "It's kind of frustrating to be competing with a company-owned facility when they don't know what their costs are." When someone's job is hanging in the balance, he adds, "they're not eager to add up the costs." This certainly helps explain why third-party warehousing and other services have been slow to catch on. A good starting place might be defining exactly what "overhead" is.

But now, companies are demanding to know what they spend in these areas. We have ample evidence that, in a weak economy, companies that don't see a good return on their investment decide they can do without. This has had a devastating impact on logistics assets, including personnel, in scores of U.S. companies. There is a lesson here: Know your true warehousing costs. It's the only way you can effectively manage and reduce them. ■

The Remaking of Public Warehouses

Growth will come largely from existing customers. To win new converts, providers must know what customers need.

By Jay Gordon, Executive Editor

During a presentation at this spring's American Warehouse Association meeting, Dr. Bernard J. "Bud" LaLonde illustrated a point with a story about the travails of shopping for office furniture. Using only wood chips and swatches of fabric, LaLonde placed an order. How long would it take? he asked. Ten weeks, the salesperson replied.

About six weeks into the order cycle, the salesperson returned to LaLonde's office. He said the wood parts of his order were finished, but that the mill had not yet produced the cloth to cover it. It would take an additional six weeks to complete the order.

"Now it's 16 weeks," LaLonde says, raising his voice slightly. "I told him, 'Somebody's going to figure out how to do this in only two weeks time, and you're going to be out of business.' Wouldn't you pay a higher price if someone said they could get your furniture to you in two weeks instead of 16? Isn't that customer value?"

The point LaLonde made was that providers of public warehousing must understand what creates value for their customers. They must become "Learning Organizations."

"The question is," LaLonde says, "can you really figure out what's happening out there and reconfigure your organization so you can serve customers better?"

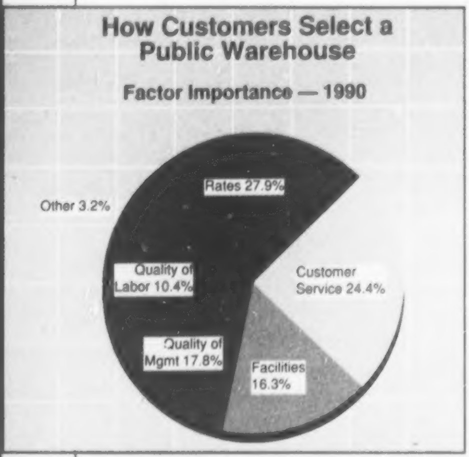
The Low-Hanging Fruit

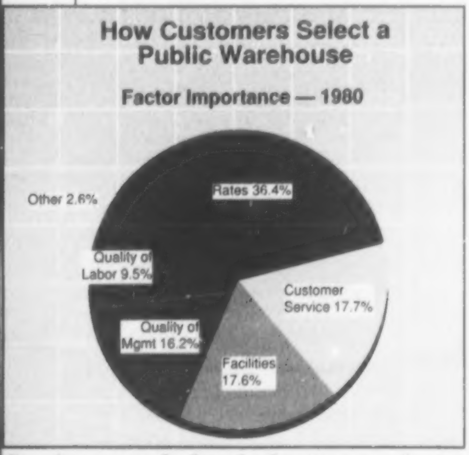
The funny thing is, public warehouse providers say shippers need to become Learning Organizations too. Just 14 percent of the total potential warehousing market is currently being handled by third parties, yet public warehousers believe that two-thirds of their revenue growth will come from existing clients (see charts, page 81). The reason, they say, is that shippers don't yet fully understand—or aren't willing to accept—the benefits that public warehousing can provide.

"There is an inherent bias on the part of companies," says James Kennedy III, president of Cherokee Warehouses, Inc. "They will see themselves providing excellent service. But they forget that the only way we can stay in business is to provide that level of service too.

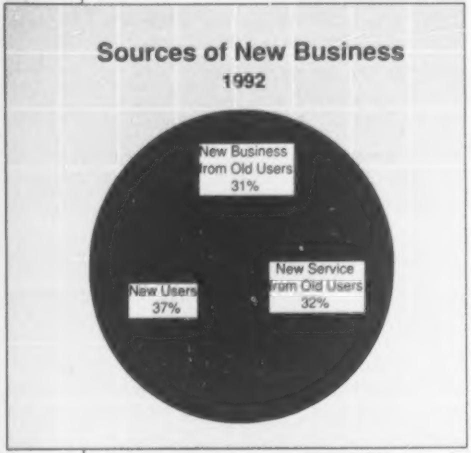
"The believers may only be doing 5 or 10 percent of their business with you, but as these corporations hollow out, if you have solutions to their problems you'll be in good shape," Kennedy adds. "But you've got to go for the low-hanging fruit. There is greater receptivity (toward third-party warehousing) today, but educating the logistics professional takes three years or more. You've got to make a living today."

Contract warehousing may be the only storage option that shippers say they're using more of, but that doesn't mean public facilities are





Service moved ahead of price as a factor in the selection of a public warehouse.


Sources of New Business
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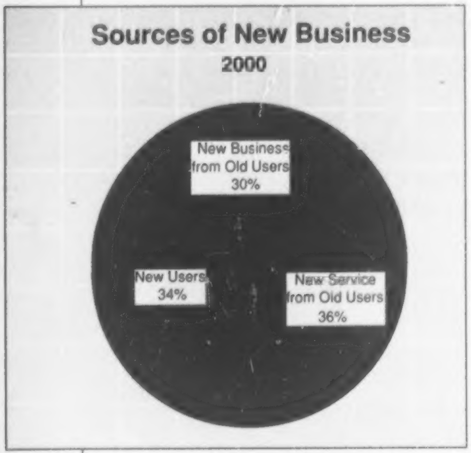
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cooling their heels. "There are always emerging companies that need space and flexibility, and don't have the capital for their own facilities," Kennedy says.

Key Trends

Several trends that will affect both shippers and public warehouse vendors:

- **Strike one, you're out!** "You're not going to get three chances today," LaLonde says. "You're going to have to produce a quality product and offer a quality service, and do it right the first time."
- **Longer term relationships.** Shippers are committing for longer periods in order to bring investment cycles into synch with contract cycles, and delivery cycles into synch with production operations. "There's a whole set of synchronizations that we haven't looked at before," LaLonde says.
- **The scope and level of logistics outsourcing will increase.** Third parties will prosper by providing specific services for specific customers, and helping them solve business problems. Sitting by the phone and giving out storage and handling rates won't do it. "Customers are asking, 'Can you help me go from six to eight turns a year?' " LaLonde says.
- **Importing and exporting will play larger roles.** More and more companies are involved in some way overseas. This can be a potentially lucrative new area for public warehousing.
- **What was extraordinary yesterday will be routine tomorrow.** JIT deliveries used to be considered a special, value-added service for a public warehouse to offer. "Now, an order comes in at noon, it has to go out today. That's a regular thing," says Kenco/Cherokee's Jim Kennedy. "Twenty to 25 percent of our business is that type of value-added." Every public warehouse firm wants to avoid being classified as a commodity business, he adds. One way Kenco avoids that stigma is by providing service like the contract operation it runs for Whirlpool in Atlanta Kenco handles all the logistics for one

> *"We want to avoid capital investment in warehousing to allow us to focus on more vital areas."*
>
> *J.T. Ampuja*
> *Vice President, Logistics*
> *Rich Products Corp.*

continued

Relative Rating of Benefits

Public, Contract and Private

	Rating Score		
Benefit	**Private**	**Contract**	**Public**
1. Lowest upfront investment	1.46	2.91	3.80
2. Easiest "sell" to upper management	2.42	2.76	2.94
3. Fewest labor problems	2.58	2.99	3.00
4. Widest range of logistics capabilities	2.84	3.00	3.06
5. Lowest delivered cost to customer	3.00	2.81	2.67

Scale: 1=Poor, to 4=Excellent; Source: Ohio State University

Relative Rating of Benefits

Public, Contract and Private

	Rating Score		
Benefit	**Private**	**Contract**	**Public**
1. Most responsive to shipper requests	3.69	3.13	2.45
2. Best customer service	3.64	3.12	2.54
3. Quickest emergency deliveries	3.61	3.11	2.61
4. Joint planning and forecasting with the shipper	3.59	3.08	2.32
5. Most reliable delivery service	3.50	3.06	2.63

Scale: 1=Poor to 4=Excellent; Source: Ohio State University

While public and contract warehousing may require the least amount of capital investment (left), third-party services won't increase their penetration of the private warehousing market until they are able to compete on a more equal footing in other areas (right).

What's your top warehousing priority?

"Cost reduction and cost avoidance are top priority in our organization. Goals have been established at all facilities which require employee participation. A major portion of our incentive packages is tied directly to cost of sales, which is impacted directly by cost reduction and avoidance."

George Altmeyer
Distribution Center Manager
Parker Hannifin Corp.

of the appliance maker's major distribution centers and eight cross-dock facilities. Using Whirlpool trucks and Kenco drivers, it delivers appliances right to the home or apartment complex and puts them in place. "We do everything except the final installation," Kennedy says.

The Changing Labor Force

One of the biggest challenges facing the public warehousing industry is managing an increasingly diverse labor force. Some key trends in this area include:

- **The aging work force.** Mandatory retirement legislation has been struck down, and workers are staying in the labor force longer. With more older workers in the labor pool, ergonomics will become increasingly important.
- **The second baby boom.** Look for another big influx of new workers in the 1995-2010 time frame.
- **Diversity.** By the year 2000, only 33 percent of the people coming into the work force will be white males. "There are no more Ozzie and Harriet or Brady Bunch stereotypes," says Dr. Michael McGinnis, professor of marketing & logistics at the University of South Alabama. "We're going to have to learn to manage a more sexually and culturally diverse work force."
- **Child care.** There is an ever increasing percentage of women with children in the work force, many of them at or near the poverty level. This has resulted in "a generation of children that are not as productive as they could be because of adverse childhood situations," McGinnis says. Employers face increased pressure to provide in-house child care.
- **Empowerment.** You might be sick of hearing about this, but it's a strategy companies will continue to embrace. "People are smarter than you give them credit for," says Jim Kennedy. "If you train them properly and allow them to be part of the solution, they'll surprise you with the job they do."
- **Dealing with disabilities.** The Americans With Disabilities Act is forcing employers to come to grips with this. "We have to broaden our 'comfort zones' in terms of who we're comfortable working with," McGinnis says. ■

DO CHECK THE INVENTORY, JAMES

The perfect English butler: attentive, alert, always anticipating the needs of others. That's what contract warehouses must model themselves after in the 1990s, says James Kennedy III, president of Cherokee Warehouses, Inc., a public warehouse firm.

"They are going to have to see the need of the customer before it becomes apparent and understand what, ultimately, they are trying to do," he says. "You have to get to the point where you are taking so much strain off of your customer that price becomes secondary. You become embedded in their company."

Kennedy doesn't believe the contract warehousing industry has progressed to that stage just yet, especially where rates are concerned. "Rates never take a back seat to much of anything," he says. Service *has* increased in importance, though. "If you're not in the ballpark on (service criteria), you won't be considered for the business," he says. "Once you become a player, though, rates are still very important."

The trends in logistics that affect warehousing bode well for the long-term viability of third-parties, he adds. The move toward smaller, decentralized DCs closer to customers appears to have reversed. "There's a trend today to fewer and larger DCs, and reduced headcounts," Kennedy says, "and that's giving contract warehousing a boost now. Contract warehousing is definitely seeing growth because of this concentration of product groups under one roof." ■

In Warehousing, Speed is King

Warehouses are evolving into cross-dock centers as shippers hold less inventory in fewer facilities, and deliver it faster, with fewer errors.

By Jay Gordon, Executive Editor

Has your use of third-party warehousing increased or decreased?

"Our company does not currently utilize third party providers, but we have initiated discussions with several contract logistics firms."
Lou Paoli
Transportation Logistics Manager
Schwinn Bicycle Co.

To understand the nature and extent of the changes that have occurred in private warehousing, consider the experience of the typical food manufacturer. Back in 1977, this company operated 14 field warehouses. Products were shipped from plants in box cars, sometimes in quantities as great as 1 million pounds. Deliveries by truck from the warehouses to retailers took three to five days.

Today, the typical food company operates five to seven warehouses, shipments from plants use intermodal and truck transportation, and orders are delivered to retailers overnight or on the second day.

"Shippers will use fewer warehouses, but they're going to pump more volume through them," says Dr. Bernard J. LaLonde, Mason Professor of Transportation & Logistics at Ohio State University.

What this all means, he says, is that speed will be king.

"What we've discovered is a basic truth: if you add time to an order cycle, you add costs. If you eliminate time, you create value for customers," says LaLonde. "We're figuring out how to do national, and even international distribution in one or two days."

To see how speed is affecting warehousing operations, consider the research LaLonde has done on a number of warehouse performance criteria (see charts, p. 86). By applying sophisticated logistics management, companies are doing more with less, and doing it faster with fewer errors. For example, order fill rates are steadily increasing, while back orders continue to drop—a trend that is expected to continue through the 1990s. When you consider that companies are holding less inventory in fewer places, this performance is impressive. The improvement in order fill rates may be attributed, at least in part, to the trend toward putting more SKUs under one roof (see profile, p. 88).

Order cycle times, and transit times are also trending downward, showing a 10 percent decline from 1988. The real eye-opener is that by 1995, companies expect to deliver orders in less than three days from receipt. Average transit time will be two days. "Just to be average, you're going to have to get (the order) out the door the same day," LaLonde says. "You want to talk about pressure on the logistics system?"

Inventory turns, another measure of speed, are also increasing. Inventory turnover has improved in all warehousing segments, but the biggest increase is in public and contract facilities. This suggests that companies are distributing faster moving items through public and contract warehouses, while slow movers are being centralized in company-owned warehousing.

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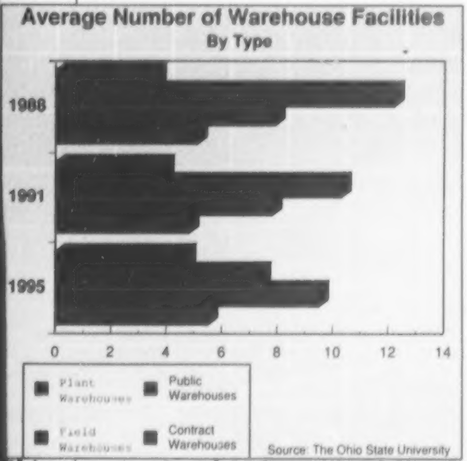


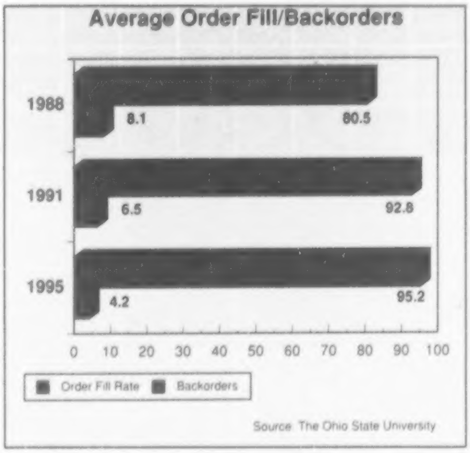
Source: The Ohio State University

Shippers are turning to contract warehousing to improve asset productivity.

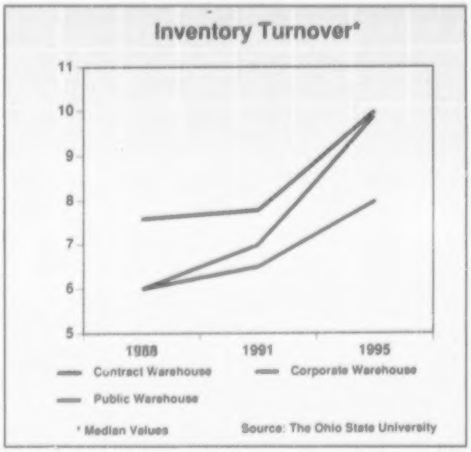
Finally, the growth of EDI confirms the importance of speed as a logistical strategy. The percentage of orders from customers transmitted by EDI is expected to double between 1991 and 1995, while the volume of EDI transactions between vendors and carriers is expected to triple. LaLonde says that by the year 2000, two-thirds of all shipments will move via "the electronic umbilical cord." This is the only way companies are going to be able to accomplish the predicted order cycle time reductions, he adds.

The Quest For Market Data

At the request of the Warehousing Education & Research Council, Robert Delaney, of Cass Logistics, has attempted to identify how much U.S. industry spends on warehousing. Extrapolating from existing data gathered by OSU's Dr. LaLonde, Delaney was able to pinpoint $23 billion in warehousing costs for the manufactured durable and non-durable segments of the economy. However, those segments represent only half the economy's final sales. Time and resources did not permit thorough

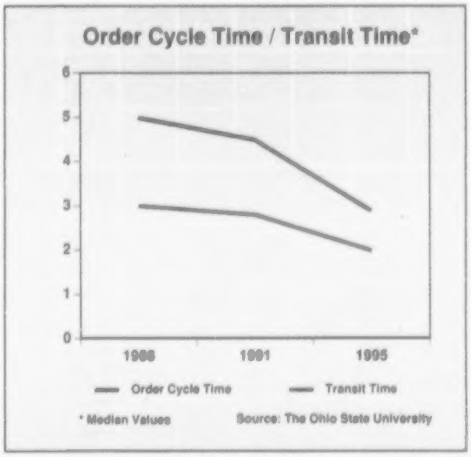


Source The Ohio State University



* Median Values

Source: The Ohio State University



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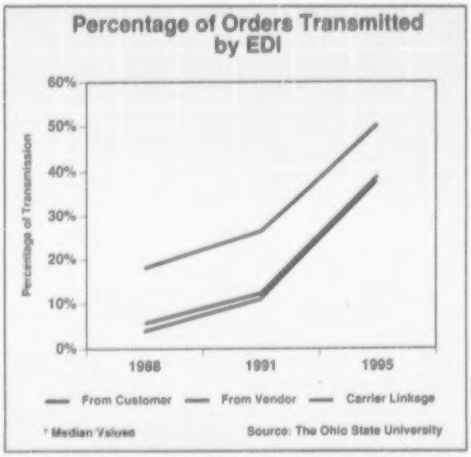

* Median Values

Source: The Ohio State University

Companies are providing better service with less inventory, and they're doing it faster with fewer errors. Order fill rates have improved and will continue to do so. Order cycle times will go from five days in 1988 to three in 1995. Shippers expect third parties to pump up turns by 40 to 50% to support their logistics networks. How will they do it? EDI.

research into the other half—warehousing costs incurred in retail, wholesale, agriculture, mining, construction, transportation, utilities, import/export and services, such as telecommunications. Delaney used a formula-driven approach to arrive at an estimate for these industries. All told, he estimates that U.S. firms spend a total of $58 billion on warehousing. Calling his research "exploratory," he urged WERC, and individual shippers, to further his initial efforts to collect warehousing data.

Manufactured durable goods account for $1.45 trillion in sales, and companies spend approximately $12 billion on warehousing. About 13 percent of these products are shipped direct from manufacturing to the customer; two-thirds were shipped from private plant or field warehouses, and 20 percent were shipped from third-party facilities. In the non-durable segment, sales were $1.41 trillion and warehousing costs were $11 billion. Companies show a greater inclination to use third-party warehousing, however; 30 percent of non-durable goods were shipped from public or contract warehouses. About 57 percent were shipped from private facilities, and 12.5 percent were shipped direct.

Industry Breakdowns

Here is how shipments originate, by warehouse type, for six major industries: chemicals, food, automotive products, pharmaceuticals, paper and electronics:

• **Food products:** Private warehouses account for 57 percent of shipments; public and contract facilities, 31 percent; 12.5 percent are shipped direct.

• **Paper products:** More than half of paper product shipments originate in a privately owned plant warehouse, and another one-fourth are shipped direct to customers. The rest is split evenly between private field warehouses and public or contract warehouses.

• **Chemicals & plastics:** About

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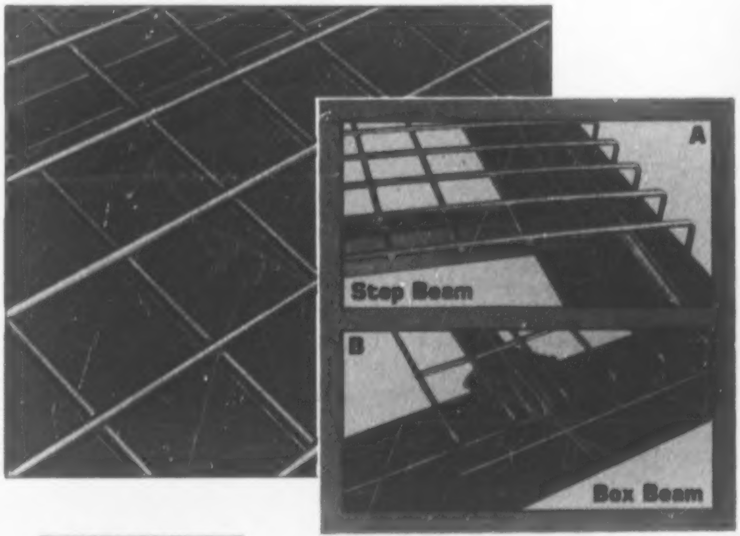

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16 percent of these shipments originate in a contract warehouse. This means the chemical industry depends more on contract warehousing than any other surveyed—nearly twice as much as the food industry, which is the next largest user. This may be a big reason that contract warehousing was the only segment to increase its market penetration over the 1988 to 1991 period. All other segments—private and public—declined slightly (see chart, p.84). Another 22 percent of chemical shipments come from public facilities, private warehousing accounts for 40 percent, and 22 percent are shipped direct.

- **Automotive products:** Despite relatively high costs and low productivity, the automotive industry continues to lean heavily on private warehousing—86 percent of shipments are handled through private DCs. This is done primarily to control JIT movements. Though many public warehouse firms have made great strides in meeting the requirements of service-intensive industries like car making, there is a strong bias here they must overcome. Contract warehousing has less than 1 percent of this market, public warehouses only 7.5 percent.
- **Pharmaceuticals:** Although 72 percent of these shipments moved through private DCs, drug companies are one of the largest users of public warehousing, and their use of contract warehousing continues to grow.
- **Electronics:** Nearly 84 percent of shipments come from a private DC, while just 6 percent originate in a public warehouse. The electronics industry is the only one of the six surveyed here that had little or no participation in contract warehousing.

LaLonde says that 61 percent of the shippers surveyed said they had made a major change regarding outsourcing in the past five years, and virtually everyone said they view outsourcing more positively now. "People want asset productivity," he says. The key question shippers are asking third party providers is, "Can you help me?" ■

PRIVATE WAREHOUSING GIVES BAXTER FLEXIBLE DISTRIBUTION

In 1989, Baxter Healthcare Corp. decided its current distribution network was not optimally configured to serve its client hospitals. The Distribution Services Division (DSD), charged with charting a new strategy, explored three options: Use multiple contract warehouses, use existing facilities more efficiently, or develop a new network. DSD, along with other departments, examined the cost and service implications of each option—and chose the latter.

Baxter Healthcare Corp.

Baxter's 80 DCs, mostly company-owned, would be reduced 50 percent by consolidating smaller facilities into highly automated "Super DCs." DSD's recommendation called for a $400 million investment. "It was a big gamble," concedes DSD President Henry Autry. "We'd never built one of these before."

The project is now in full swing. The first of the Super DCs opened last fall, and the early returns are encouraging. Order accuracy improved 6 percentage points to top 99 percent, line fill rates are up because the larger facility stocks more SKUs, inventory accuracy has improved and productivity is trending upward. The new facilities and their updated technology also enable Baxter to give customers what they want: flexible distribution. "They want us to do things the way their receiving department requires it, from invoicing to the way product is placed on a pallet," Autry says.

DSD shunned contract warehousing because it would have resulted in multiple handlings and customers getting four or five different deliveries. "Customers wanted *one* Baxter," Autry says, "and that scenario did not give them one Baxter."

Information Keys Warehouse Market

Look for acceleration of the shift in capital spending to systems that move information faster and more efficiently.

By Jay Gordon, Executive Editor

Warehousing, like many other areas in logistics, is being driven by the need for fast, accurate information.

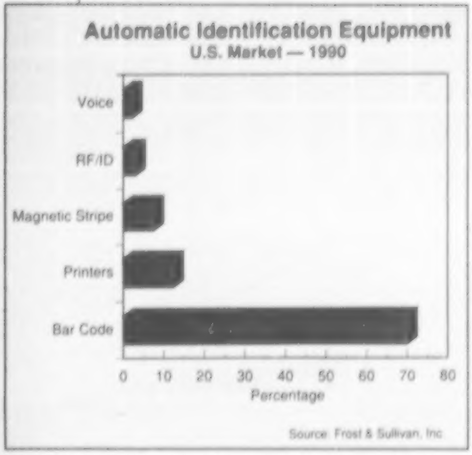
For proof, you only need to see where companies are projected to spend their capital equipment dollars in the next several years. The worldwide market for automatic identification products—bar code, radio frequency and other types of data collection systems—will more than double by 1995, predicts market research firm Frost & Sullivan. U.S. demand should follow a similar growth curve (see charts below). The market for automated material handling equipment, meanwhile, is expected to remain flat, with a couple of exceptions (see page 90).

While auto ID may have special appeal in a soft economy (see profile, page 91), its value doesn't diminish when business is strong. "In good economic times it allows you to manage growth and expansion, and to put money into your core business," says Alan Gold, director of strategic marketing services for Symbol Technologies.

Probably the main reason companies are embracing auto ID in increasing numbers is because the returns are quick and substantial. But other factors come into play also:

- **More and more users are being forced into auto ID.** Increasing numbers of companies are mandating that component and finished good shipments from suppliers be bar coded. "Driving forces such as electronic tracking of inventory, JIT and Quick Response are pushing potential users into a corner, from which they must decide the most logical format and technology to institute," the Frost & Sullivan study says.

continued



Source: Frost & Sullivan, Inc

Bar coding leads the way in auto ID markets because it is the most reliable, accurate and easy to implement technology.

The Worldwide Auto ID Market
Shipments from U.S. Manufacturers

1990	$2.6 billion
1991	$3.1 billion
1995*	$7.1 billion

Source: Frost & Sullivan; * projection

The U.S. Demand

1990	$1.7 billion
1991	$2.0 billion
1995*	$4.6 billion

Source: Frost & Sullivan; * projection

Auto ID Equipment Sales
Bar Code Devices

1990	$1.79 billion
1991	$2.14 billion
1995*	$4.82 billion

Source: Frost & Sullivan; * projection

Auto ID Equipment Sales
Printers

1990	$316 million
1991	$389 million
1995*	$976 million

Source: Frost & Sullivan; * projection

- **New technology.** Manufacturers are constantly coming up with scanners that are smaller, lighter and faster. Bar codes, too, contain more and more information in less and less space.
- **The declining cost of hardware.** Especially scanners, printers and data terminals; in printers, for example, there have been significant developments at the low end of the market that make the technology accessible to companies that cannot afford more expensive equipment.

Auto ID's surge will be led by bar coding (see chart, page 89). A study by Market Intelligence Research Corp. (MIRC) outlines reasons for bar code's wider acceptance:

- **Nothing succeeds like success.** Companies that use bar coding report great success, including significant savings in time and labor costs and improved productivity.
- **Developments in related technologies have made bar coding more attractive.** Radio frequency, in particular, has improved the usefulness of bar coding, as communication between data terminals and host computers is improved.
- **Bar coding is becoming more accessible.** With the development of standards and a reduction in price for certain types of equipment, bar coding is becoming available to increasing numbers of small- and medium-sized companies.
- **Increased education.** Groups like the Automatic Identification Manufacturers (AIM) have made great strides in educating companies both here and in Europe about the advantages of auto ID. Bar coding is perhaps the easiest technology to understand, since it is already famil-

Material Handling Equipment Market Conveyors	
1990	$350 million
1995*	$390 million

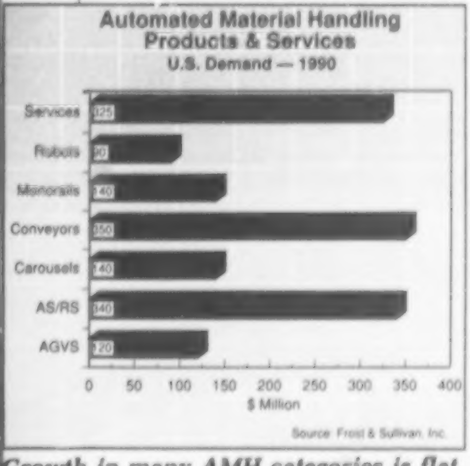
Source: Frost & Sullivan; * projection

Material Handling Equipment Market Services	
1990	$325 million
1995*	$342 million

Source: Frost & Sullivan; * projection

Material Handling Equipment Market AS/RS	
1990	$340 million
1995*	$292 million

Source: Frost & Sullivan; * projection



Source: Frost & Sullivan, Inc.

Growth in many AMH categories is flat. The market for services will grow because successful specification, design and installation of automated equipment requires high skill levels. Demand for conveyors should remain strong.

iar to most people through checkout and retail point-of-sale scanning.

Other trends MIRC says will influence auto ID markets over the next several years:

- **Integration.** Now you can get scanner, decoder, data collection terminal and printer all in one package. Devices that integrate the various data collection functions into a single unit will be the most popular. This trend is evident in software as well. As software is written for more and more applications, these will be integrated with other existing applications.
- **Standardized symbologies.** The ability of certain market segments to standardize is a big reason bar codes have succeeded. The UPC code, which was developed for the supermarket industry and is now widely used in retailing, is a prime example. Still, single industry standards can create confusion when products are produced for distribution to numerous markets and countries. A movement is under way to take standardization to the next level by creating a broad-based, consumer-responsive "open system" for auto ID. This system would enable manufacturers and customers in a wide range of industries worldwide to share information through the use of bar code scanning.
- **Off-the-shelf packages.** As software and hardware become more widely available, more standardized and more affordable, users will increasingly buy off-the-shelf packages. Symbol Technologies recently introduced a kit that comes with a hand-held laser scanner, PC interface, cable, power supply, user's manual and other accessories at a list price of $1,495. The system is easily installed, even for non-technical users.
- **Improved customer service.** Hardware and software are becoming increasingly sophisticated, creating a need for better service and

continued

What technology makes the biggest impact on your warehouse?

"Bar coding has proved an effective method of handling reusable container inventory information."

Andrew A. Twarowski
Customer Service Operations Manager
FMC Corp.

"We have in place an EDI system that enables our distributors to have direct access to via PC to our order entry and shipment information. Systems-driven carousels and bar coding are our next projects."

George Altmeyer
DC Manager
Parker Hannifin Corp.

TURNKEY SOLUTIONS

The recession has been driving the business climate for the better part of two years, and that's just the way Intermec likes it.

"Capital budgets are smaller, and people are more reluctant to spend," acknowledges John Paxton, president of the Everett, Wash., automatic identification manufacturer. "But they need to increase their productivity by adding wisely to their overall capabilities." Usually, the "additions" Paxton refers to are in the form of systems that substitute information for inventory and move goods more efficiently; this bodes well for Intermec and its new parent, the Industrial Automation Division of Litton Industries.

"That," says Paxton, "is where the synergies between Litton and Intermec pay off. We can combine highly efficient material handling with real time information management." Like an automatic sortation system that can scan and read bar coded information traveling by at a mere 500 feet per minute. Paxton believes that the ability to combine material handling and auto ID hardware with the software that ties them together is a powerful asset. "We are able to provide a turnkey operation," he says. "That's what today's more sophisticated buyers are looking for."

In the early stages of the recession, Paxton says, many of Intermec's orders "slid to the right," as top management reexamined its spending priorities to determine which projects promised the greatest return. Even though the typical payback on bar code or automatic sortation systems is a year or less, this period of reconsideration was enough to slow Intermec's growth temporarily. Now, though, users appear to be convinced that they need the benefits these systems provide. "Our business is picking up much faster than the economy in general," Paxton says, and with Litton and Intermec customer bases that are complementary, "we'll grow faster than the industry as a whole." ■

What technology makes the biggest impact on your warehouse?

"AS/RS, because it has improved our productivity, especially in the pick/pack area."

Lou Paoli
Transportation Logistics Manager
Schwinn Bicycle Co.

"We're in the midst of evaluating a new warehouse management system in one of our facilities, which represents our first venture into bar coding and RF equipment."

Dennis T. Andruskiewicz
Vice President-Distribution
The Martin-Brower Co.

maintenance. Users are also demanding better support, especially in documentation.

SLOW GROWTH

In a survey of 500 automated material handling users, Frost & Sullivan reports that 87 percent indicate they have realized the expected benefits of their equipment purchases. Yet they do not plan to increase spending significantly in this category.

Department of Commerce data indicates that only 25 percent of manufacturers with 500 employees or more are using automatic storage & retrieval systems (AS/RS), and just 13 percent use automated guided vehicles. Despite these low levels of market penetration, demand appears to be flat for this equipment.

What is holding back the development of these systems? According to Frost & Sullivan, there are several reasons:

- Cost justification
- Lack of understanding of the deficiencies of human-based systems
- Reluctance to change to something less familiar.

The U.S. demand for AMH equipment was $1.5 billion in 1990, and 20 percent of that was services related to the design, installation and integration of equipment. There are three basic types of suppliers in this market: companies that make products and offer integration services, those that only make products, and those that offer only services, sucn as integration, simulation or installation. As the complexity of AMH systems increases, more and more customers are looking to outside suppliers for these services.

Another bright spot is the market for conveyors, one of the few growth areas for AMH equipment. Once thought of as simply a set of casters and a strip of rubber, the conveyor is emerging as a prized weapon in the fight for productivity. "Computers and bar coding have elevated the simple conveyor to new highs in capability," Frost & Sullivan notes.

Forecasts for AS/RS are mixed.

U.S. Lift Truck Shipments

No. of Units Sold

Year	Electric Rider	Motorized Hand	ICE
1981	19,784	18,734	31,885
1982	14,859	13,988	18,533
1983*	16,227	16,237	26,245
1984	23,983	21,958	45,338
1985	26,400	22,493	47,844
1986	25,818	24,589	46,195
1987	24,928	24,857	47,945
1988	29,202	27,205	48,535
1989	31,010	29,838	55,104
1990	27,877	26,941	47,702
1991	24,565	23,599	38,406
1992**	6,379	6,678	9,862

Source: Industrial Truck Association; *the first year shipments of Japanese members were included. **1Q only. ICE–Internal Combustion Engine.

Frost & Sullivan says that AS/RS' initial growth phase has passed (see chart, page 90). Carousels will remain a hot item because of their efficient application in parts and small item storage.

MIRC, meanwhile, estimates the total U.S. market for AS/RS at $461 million in 1990, and forecasts it will surpass $775 million by 1997—an annual growth rate of 7.7 percent. (MIRC's market figure is higher than Frost & Sullivan's may be because it includes racks, bins, drive mechanisms and control hardware and software in its estimate.)

An increasingly important part of the AMH market is the use of recycled systems. AS/RS has been especially viable in this area. As modern facilities are "decommissioned" in the wake of takeovers and bankruptcies, suppliers have sprung up that specialize in reconditioning and reinstalling AMH systems. This can mean replacing the electronics with more advanced systems, moving entire systems to new facilities or expanding by adding equipment from a deactivated site. This trend has the effect of reducing demand for new equipment, but it also creates demand for AMH equipment that might not otherwise exist at the price levels of new equipment.

LIFT TRUCKS GO GREEN

The lift truck industry appears to be emerging from a two-year slump in sales that, like the softness in other capital equipment categories, can be attributed to the recession. In fact, a pattern is emerging in which lift truck sales rebound vigorously following a recession. "It might not get

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back to 1990 levels," says David Crocker, a consultant with Power Systems Research in St. Paul, Minn. "But people said (after the recession in the early 1980s) that the market would never get back to where it was in the late 1970s, either. Then we had a year like 1989." (see chart, p. 92)

Perhaps the biggest factor affecting lift truck markets today is the push for environmentally sound equipment. The Environmental Protection Agency is pushing to regulate off-highway industries, including lift trucks. Unions will play a role in this "green" movement also, as they make bans on diesel lift trucks part of their bargaining platform.

All of which opens the door for manufacturers of electric vehicles. "By the end of the decade, we're going to be driving around in electric cars," Crocker says. Some off-highway vehicles, such as the tow tractors used in airports, will soon be mandated electric vehicles. "It's apparent that's where the forklift industry is heading," Crocker says. "There has been a significant swing toward electric engines from internal combustion, and it is going to accelerate." Given a choice between electric and IC trucks with similar performance characteristics, more and more buyers are choosing electric even though they are significantly more expensive. However, in terms of life cycle costs, including maintenance and fuel, electric trucks usually net out lower than IC vehicles.

Manufacturers have not ignored their IC product lines. Hyster, for example, recently introduced a 6-cylinder fuel-injected engine that should result in fuel savings and lower emissions. Also, Toyota's 1992 models will have a three-way catalytic convertor that will reduce nitrous oxide emissions in its liquid propane gas (LPG) and gasoline-powered forklifts. Toyota says the system will help its trucks meet the forklift emission standards expected from the California Air Resources Board, a leader in setting emission standards for off-highway vehicles. ■

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VOL. 91, NO. 8

COVER STORY

32 QUEST FOR QUALITY

Shippers are constantly looking for quality in their carriers. Why would they expect anything else? An optimal transportation partner is one that will go above and beyond the call of duty. In our ninth annual Quest for Quality survey, the nation's shippers rate their carriers in several categories and select those that set the standard for transportation excellence.

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Handing out quality awards to motivate carriers may seem trite, but for companies that take the process seriously, like Westinghouse, the rewards can be significant.

90 THE STATE OF QUALITY IN LOGISTICS

Logistics quality processes have been described as "immature," but these profiles of shipper and carrier quality efforts show that the movement has indeed taken hold.

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EDITORIAL STAFF

THOMAS A. FOSTER, ESQ. – Editorial Director
(215) 964-4379

JAY GORDON – Executive Editor
(215) 964-4385

E.J. MULLER – Senior Editor (West Coast)
(415) 769-0884

SHARON STRUCKUS – Senior Associate Editor
(215) 964-4387

EMILY HALL – Production Manager
(215) 964-4384

EDITORIAL FAX #: 215-964-4381

CONTRIBUTING EDITORS

JOSEPH V. BARKS (215) 964-4385
ROBERT J. BOWMAN (415) 752-4884
DR. JOSEPH CAVINATO (814) 863-2054
KURT HOFFMAN (301) 762-8250
STANLEY HOFFMAN (203) 790-4195
RICHARD MALKIN (718) 343-7718
JAMES D. MARTIN (708) 256-8182
ROBERT SELWITZ (212) 877-3414
SY ZIVAN (212) 830-5357

FOREIGN CORRESPONDENTS

ANDREW TAUSZ – Canada
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EDITORIAL ADVISORY BOARD

DR. JOSEPH L. CAVINATO
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QUEST FOR QUALITY

In our ninth annual Quest for Quality survey, the nation's shippers rate their carriers and select those that set the standard for excellence.

Performance. It's the ultimate test for Olympic athletes, and for freight transportation companies. All carriers promise great performance, and most try very hard. But invariably, only a few really perform to the levels expected by today's demanding shippers.

"From the sales force, to operations at the local terminal, to the driver who serves our plants, one carrier we use displays the most consistent attitude of doing whatever is necessary to provide 100 percent satisfaction in all performance areas," says Henry L. Walczak, manager of transportation for General Motors Powertrain Division in Flint, Mich.

Judging from the scores reported in this, our ninth annual Quest for Quality survey, all shippers are becoming extremely demanding. But these shippers are also increasingly interested in setting up long-term relationships with the carriers that do perform.

Because of this trend, we asked respondents to this year's survey to indicate if the carrier they rate is a "core" carrier, i.e., one that handles a very large portion of their freight as a result of a partnership or an especially strong relationship. For each carrier, we present these core carrier scores, along with the scores reported by all regular users of each company listed.

For all ratings, respondents used a three-point scale in their ratings with "1" being poor, "2" being average and "3" being outstanding.

In our direct mail surveys, we asked shippers to rate carriers in five performance categories:

- **On-time performance:** *on-time pickup and delivery; consistent, dependable schedules and transit times.*
- **Value:** *competitiveness of rates with carriers offering similar services; relationship of prices to service levels provided; simplicity of tariffs and contract prices.*
- **Equipment & operations:** *equipment availability; condition of equipment; good attention to safety; low incidence of loss and damage.*
- **Customer service:** *willingness and ability to quickly answer inquiries and solve problems; claims settled promptly and courteously.*
- **Administration & staff:** *knowledge of shipper needs and carrier capabilities, responsiveness to special requirements; billing accuracy; regular and effective sales calls that provide timely information on services and options; EDI capability.*

continued

Our report recognizes as "Quality Carriers" only those transportation companies that excel in all five performance categories (see p. 36).

There are several changes in this year's survey that merit special mention. We received so many requests from LTL carriers to be included in our survey that we had to set a revenue threshold of $40 million for any LTL carrier to appear on a survey form. As a result of this new threshold, we regrettably have had to remove several excellent carriers from the survey. We especially regret having to remove A. Duie Pyle, which has been a three-time quality carrier. These deletions in no way reflect badly on the carriers.

The trend toward regionalization of LTL marketing and operations has sparked discussion with a number of carriers in our survey. Preston Trucking, for example, describes itself as a regional carrier in both the Northeast and the Midwest. By our definition, a regional carrier operates primarily in one region, so we have placed Preston in a new category that includes both multiregional and interregional carriers.

Similarly, one national carrier has started regional LTL operations out of its existing terminals, and at least one other national carrier is expected to do the same thing within the next year. While it could be argued that these are separate regional carriers, for the purposes of our survey, we see these regional operations as an additional service offering of the national carrier's operations.

Clearly, traditional labels no longer adequately describe how many carriers actually operate. We will be closely following how carriers of all types position themselves in the market, and we will make changes in our survey to adapt to these changes.

We also had a major disappointment this year with the intermodal portion of the survey. Despite three mailings, we did not receive enough completed questionnaires to produce statistically valid scores, either for direct railroad intermodal services, third party intermodal operators or stacktrain services. Therefore, no results are published for these groups this year.

This year's survey includes another enhancement. We asked respondents to each of the 12 modal or regional questionnaires to weigh the relative importance of the five peformance criteria on a scale of one to five with five being extremely important and one being least important. The weights given to each performance category were similar, but by no means identical (see box below). LTL buyers located at actual shipping points, for example, value the human elements of quality—customer service and administration and staff—much higher than LTL buyers at headquarters locations. On the other hand, bulk shippers ranked equipment and operations even higher than value. And while most respondents considered value a somewhat distant second to on-time performance, cost-conscious rail shippers rated value nearly as highly as on-time performance.

The data in this report comes from a series of direct mail questionnaires, each focusing on a specific mode of transportation. Survey candidates were selected based on size, geographic location and indicated usage of a particular type of transportation. We received over 2,500 survey returns, which we reviewed for authenticity and edited to ensure consistent data. We turned over 2,376 qualified questionnaires to Chilton Research Services, the fifth largest business-to-business research company in the U.S., for tabulation.

As a final note, we would like to emphasize that the scores reported in this survey are not intended to serve as a way of ranking carriers, and DISTRIBUTION Magazine advises shippers to ignore such improper attempts to use the scores in this report. ■

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HOW BUYERS OF TRANSPORTATION SERVICES RANK PERFORMANCE CATEGORIES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Administration & Staff
All Buyers of LTL Services	4.61	3.78	2.32	3.24	1.85
Nat'l Headquarters LTL Service Buyers	4.62	3.85	2.36	2.87	1.69
Northeast LTL Buyers	4.64	3.81	2.38	3.29	1.91
South/Southcentral LTL Buyers	4.62	3.73	2.35	3.28	1.91
Midwest LTL Buyers	4.58	3.78	2.22	3.26	1.74
West LTL Buyers	4.59	3.76	2.32	3.23	1.85
Domes. Airfreight & Exp. Service Buyers	4.85	3.48	2.46	3.19	1.55
Int'l Air Transportation Service Buyers	4.59	3.61	2.32	3.29	1.78
Ocean Service Buyers	4.34	3.78	2.85	2.90	1.80
Truckload Service Buyers	4.73	3.60	3.01	2.83	1.61
HHG Service Buyers	4.26	3.15	2.86	3.45	1.81
Bulk Carrier Service Buyers	4.55	3.23	3.59	2.98	1.43
Rail Service Buyers	4.13	4.02	2.86	2.47	1.93

DISTRIBUTION'S 1992 QUALITY CARRIERS

NATIONAL LTL CARRIERS

CF MotorFreight
Roadway Express
Watkins Motor Lines
Yellow Freight System

MULTIREGIONAL & INTERREGIONAL LTL CARRIERS

NW Transport Service, Inc.
Preston Trucking Co.

REGIONAL LTL CARRIERS

South/Southcentral

AAA Cooper Transportation
Arkansas Freightways, Inc.
Averitt Express
Con-Way Southern Express
Con-Way Southwest Express
Saia Motor Freight Line
Southeastern Freight Lines

REGIONAL LTL CARRIERS

Midwest

Crouse Cartage Company
TNT Holland Motor Express

REGIONAL LTL CARRIERS

West

TNT Reddaway

SURFACE PACKAGE CARRIERS

United Parcel Service

INTERNATIONAL AIRFREIGHT & EXPRESS CARRIERS

Federal Express

DOMESTIC ALL CARGO AIR CARRIERS

Federal Express

DOMESTIC AIR EXPRESS CARRIERS

Federal Express

INTERNATIONAL PASSENGER/CARGO AIRLINES

Air Canada
Delta Airlines
KLM Royal Dutch Airlines
Swissair North America

DOMESTIC PASSENGER/ CARGO AIRLINES

Delta Airlines
Southwest Airlines

INTERNATIONAL AIR FORWARDERS

Air Express International
Panalpina
Pilot Air Freight

DOMESTIC AIR FORWARDERS

Intertrans Corporation
Lynden Air Freight
Pilot Air Freight
Skyway Freight Systems

HOUSEHOLD GOODS CARRIERS

Allied Van Lines

OCEAN CARRIERS

Crowley Maritime
Hapag/Lloyd of America, Inc.
Neptune Orient Lines

MAJOR RAILROADS

Norfolk Southern
Union Pacific Railroad
Wisconsin Central Ltd.

BULK MOTOR CARRIERS

Montgomery Tank Lines, Inc.

TRUCKLOAD CARRIERS

Contract Freighters
Crete Carrier Corporation
Freymiller Trucking Inc.
Marten Transport, Ltd.
M.S. Carriers
Ranger Transportation Inc.
Roadrunner Enterprises
Schneider National Carriers, Inc.
Swift Transportation Company, Inc.
Tri-State Motor Transit Company

DISTRIBUTION's designation of these companies as Quality Carriers means that each has received ratings at or above average in all five performance categories: on-time performance, value, equipment & operations, customer service and administration & staff.

Sometimes it's hard to picture the nation's largest carriers, with thousands of trucks and hundreds of terminals, as nimble, responsive competitors. But that's what shippers like about the national LTL carriers.

"Our company provides military and government packaging services, and we require a government inspection before product is shipped," says Sandy Ledee, president of Gemini Packaging Service in Syracuse, N.Y. "So it's difficult to predict in the morning what will be ready to go and when. Our carrier responds promptly whenever I call and the salesman is always available for questions or problems, and he drops by to check on our service."

A little bit of extra attention can go a long way in cementing relationships between shippers and their national LTL carriers. While shippers unanimously expect on-time, damage-free delivery, it's these "extras" that they remember.

"Our carrier is always trying to accommodate our service needs, with after hours pickup, fast delivery times and ease of communication between their dispatch and our shipping department," says Scott Burchill, traffic manager for Chemstone, Inc., in Phoenix.

"We get competitive rates and consistently excellent service," says Jeffrey A. Neal, office manager for Granite Surface Plate Co. in Englewood, Ohio. "Our sales rep goes beyond the call of duty to trace our shipments, and, if necessary, speed our freight through the system."

Shippers also appreciate it when these carriers understand that they are an extension, and a representative, of the shipper's company. "When I ship with our national LTL carrier, I have the confidence to advise customers of arrival times without having to make lots of phone calls," says Dick Filson, warehouse supervisor for Ancra Southwest in Grand Prairie, Texas.

NATIONAL LTL CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.26** **2.46**	**2.17** **2.45**	**2.29** **2.49**	**2.23** **2.51**	**2.21** **2.49**
ABF Freight System	Total Core	2.13 2.36	2.10 2.38	2.21 2.46	2.16 2.48	2.13 2.46
Carolina Freight	Total Core	2.14 2.39	2.07 2.38	2.17 2.38	2.13 2.41	2.09 2.35
CF MotorFreight	Total Core	**2.35** **2.55**	**2.26** **2.48**	**2.38** **2.54**	**2.33** **2.56**	**2.33** **2.56**
Overnite	Total Core	2.17 2.43	**2.16** **2.50**	2.16 2.35	2.05 2.28	2.04 2.29
Roadway Express	Total Core	**2.33** **2.58**	**2.19** **2.47**	**2.35** **2.52**	**2.29** **2.56**	**2.26** **2.53**
Watkins	Total Core	**2.35** **2.71**	**2.18** **2.60**	**2.30** **2.54**	**2.28** **2.71**	**2.23** **2.65**
Yellow Freight	Total Core	**2.31** **2.52**	**2.19** 2.41	**2.35** **2.52**	**2.29** **2.52**	**2.28** **2.50**

MULTIREGIONAL & INTERREGIONAL LTL CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.12** **2.43**	**2.08** **2.41**	**2.08** **2.31**	**2.08** **2.41**	**2.07** **2.39**
ANR Freight System	Total Core	1.92 2.32	1.97 **2.51**	1.87 2.14	1.96 **2.53**	1.95 **2.49**
Central Transport	Total Core	1.95 2.28	2.01 **2.41**	1.88 2.01	1.90 2.23	1.90 2.16
Churchill Truck Lines	Total Core	**2.19** **2.53**	**2.08** **2.51**	**2.09** **2.37**	2.07 2.38	2.06 **2.40**
Frozen Food Express	Total Core	2.07 2.08	1.87 1.85	**2.18** 2.23	2.05 2.00	**2.07** 2.00
NW Transport	Total Core	**2.35** **2.56**	**2.21** 2.36	**2.34** **2.50**	**2.20** 2.35	**2.23** **2.42**
Old Dominion	Total Core	2.07 2.34	**2.09** 2.38	**2.08** **2.31**	2.02 2.35	2.03 2.30
Preston Trucking Co.	Total Core	**2.23** **2.48**	**2.15** **2.43**	**2.20** **2.37**	**2.24** **2.52**	**2.19** **2.50**

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

Shippers appreciate solid performers in these markets because they are logistically difficult to serve and financially hard to prosper in.

"Despite some of the financial problems that have plagued carriers servicing the Northeast, our carrier has flourished by performing the highest quality transportation, from pickup to delivery," says Dale Sheehan, corporate transportation analyst for Conair Corp. in East Windsor, N.J.

"Our carrier is responsive and accommodating as far as resolution of problems or answering inquiries is concerned, and it provides us with consistent two-day, and occasionally overnight service into West Virginia, which is outstanding," says a Pennsylvania-based shipper.

With competition so heavy, carriers can get into a bind by overstating their capabilities. Shippers usually know when carrier claims are hard to back up; a straightforward approach scores more points. "Our carrier has a knowledgeable staff, dependable transit times and excellent prices," says Nelson R. Krupp, Jr., traffic manager for Eastern Continuous Forms, Inc. in Blue Bell, Pa. "They have a team outlook, and with them it's not just hype."

With the vicious competition in these regions, there are almost always carriers at the door tempting shippers with lower rates. The old axiom, 'You get what you pay for' usually applies. Ivan Miller, shipping foreman for Galion Dump Bodies, Inc., in Winesburg, Ohio, recently gave a shipment to a carrier that had a rate $50 lower than what he was paying. The shipment was two days late, tracing it was impossible and the customer wound up having to pick it up at the trucker's terminal. Now he thinks twice about trying cut-rate carriers. "Even though the carrier we use now is not the lowest priced," he says, "if I ship it by them, I know when it's going to be there and I know it will be in good condition."

REGIONAL LTL CARRIERS – MIDWEST

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total	**2.27**	**2.10**	**2.16**	**2.16**	**2.16**
	Core	**2.55**	**2.43**	**2.36**	**2.45**	**2.47**
Advance	Total	2.17	**2.12**	2.03	2.09	2.10
	Core	2.29	2.35	2.13	2.33	2.36
Be-Mac Trans.	Total	2.13	2.07	1.94	2.01	2.07
	Core	2.43	**2.46**	1.92	2.23	2.21
Con-Way Central	Total	**2.52**	1.97	**2.45**	**2.34**	**2.27**
	Core	**2.79**	2.39	**2.67**	**2.65**	**2.64**
Crouse Cartage	Total	**2.48**	**2.23**	**2.19**	**2.27**	**2.25**
	Core	**2.73**	**2.48**	**2.39**	**2.57**	**2.61**
Fore Way Express	Total	2.13	2.06	2.02	2.08	2.09
	Core	2.37	**2.45**	2.27	2.44	2.36
Hyman Freightways	Total	2.09	2.06	2.05	2.06	2.06
	Core	2.35	2.37	2.15	2.27	2.36
Jones Transfer (MI)	Total	1.70	1.83	1.85	1.85	1.80
	Core	2.00	2.00	2.00	2.00	2.00
Middlewest Frtwys.	Total	**2.28**	**2.24**	**2.22**	**2.27**	**2.24**
	Core	**2.56**	**2.44**	**2.40**	**2.56**	**2.50**
OK Trucking	Total	1.98	2.00	1.72	1.80	1.84
	Core	2.14	2.29	1.57	1.86	1.88
Spartan Central	Total	2.20	2.00	1.98	1.90	2.02
	Core	2.30	2.09	2.00	1.91	2.18
TNT Holland	Total	**2.53**	**2.31**	**2.40**	**2.34**	**2.39**
	Core	**2.72**	**2.57**	**2.57**	**2.56**	**2.60**

REGIONAL LTL CARRIERS – NORTHEAST

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total	**2.26**	**2.12**	**2.40**	**2.16**	**2.16**
	Core	**2.57**	**2.49**	**2.52**	**2.47**	**2.46**
APA Transport	Total	2.13	2.00	2.19	2.03	2.05
	Core	2.42	2.36	2.38	2.28	2.35
NEMF	Total	2.01	2.02	2.01	1.99	2.00
	Core	2.35	2.44	2.29	2.21	2.24
New Penn	Total	**2.42**	2.11	2.30	**2.19**	**2.21**
	Core	**2.82**	**2.69**	**2.61**	**2.61**	**2.61**
St. Johnsbury	Total	2.22	2.11	2.13	2.11	2.11
	Core	2.49	2.45	2.28	2.39	2.40
TNT Red Star	Total	**2.43**	**2.28**	2.32	**2.35**	**2.33**
	Core	**2.63**	**2.48**	2.50	**2.63**	**2.54**
Ward Trucking	Total	**2.29**	**2.16**	2.18	**2.17**	**2.23**
	Core	**2.73**	**2.62**	**2.52**	**2.52**	**2.65**

** Averages calculated on basis of data for all carriers in category, not just those listed.*
Scores at or above average appear in boldface.

QUEST FOR
QUALITY
DISTRIBUTION

The South is high-service territory for shippers. And that can translate into a distinct competitive advantage.

"For 1991, our carrier's on-time delivery rate was 99.9 percent in my area, with no claims," says Rosalind W. Haith, area transportation representative for Houston-based Chevron USA. "They have refined their schedules to the point that on shipments originating in Houston, we can guarantee delivery times at destinations as far away as the Florida Keys in specific segments of the day." That means Chevron's customers are happy, and it helps the company present the quality image it wants. "It gives us a high level of credibility," Haith says. The benefits of such a relationship are reciprocal, she adds. "It would be hard for another carrier to take the business away from them," she says of her carrier, "and we would expect that our ability to perform would make it difficult for another supplier to take away our business with the customer."

Linda Leone-Roberson, warehouse/used equipment supervisor for Tennant Co. in Norcross, Ga., has had a similar experience with her southern carriers, one of which was named carrier of the year for the entire country in 1991. It had the highest percentage of on-time deliveries among the carriers Tennant uses, "and their quality program shows their concern for our customers."

For example, the carrier often comes in to pick up for customers that call in orders late – sometimes after it's already been there for a pickup earlier in the day, says Leone-Roberson. She's also impressed that its employees take the time to make Saturday deliveries when customers require it. She considers that above and beyond the call of duty. "Because we get excellent service on a consistent basis," she says, "our customers now look for that level of service. That makes us a better supplier in their eyes."

REGIONAL LTL CARRIERS – SOUTH/SOUTHCENTRAL

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.35** **2.60**	**2.17** **2.41**	**2.26** **2.50**	**2.18** **2.45**	**2.17** **2.44**
AAA Cooper	Total Core	**2.44** **2.69**	**2.28** **2.49**	**2.31** **2.62**	**2.23** **2.61**	**2.26** **2.66**
Arkansas Freightways	Total Core	**2.52** **2.71**	**2.32** **2.58**	**2.51** **2.68**	**2.29** **2.49**	**2.31** **2.51**
Averitt Express	Total Core	**2.64** **2.65**	**2.33** **2.53**	**2.64** **2.78**	**2.34** **2.49**	**2.30** **2.53**
Central Freight	Total Core	2.25 2.36	2.04 2.11	2.25 2.39	2.00 2.13	2.07 2.18
Con-Way Southern	Total Core	**2.44** **2.71**	**2.19** 2.36	**2.38** **2.51**	**2.29** **2.51**	**2.26** **2.46**
Con-Way Southwest	Total Core	**2.50** 2.57	**2.35** **2.43**	**2.48** **2.61**	**2.43** **2.61**	**2.47** **2.57**
Estes Express Lines	Total Core	2.23 **2.68**	2.01 **2.44**	2.04 2.40	2.04 2.44	2.05 **2.44**
Fredrickson	Total Core	2.03 2.43	2.03 **2.43**	1.94 2.14	1.91 2.29	2.00 2.29
Merchants	Total Core	2.21 2.50	2.03 2.38	2.04 2.23	2.01 2.35	1.96 2.23
Red Arrow	Total Core	2.26 2.50	2.09 2.00	2.14 2.25	**2.19** 2.33	2.14 2.25
Sala Motor Freight	Total Core	**2.46** **2.70**	**2.30** **2.57**	**2.32** 2.40	**2.41** **2.62**	**2.32** **2.60**
Smalley Trans.	Total Core	1.78 2.00	1.81 2.09	1.74 2.00	1.78 2.18	1.78 2.09
Southeastern	Total Core	**2.46** **2.78**	**2.27** **2.50**	**2.34** **2.72**	**2.30** **2.66**	**2.22** **2.59**
Southwest Motor	Total Core	2.23 **2.67**	2.00 2.20	2.20 **2.83**	2.16 2.33	2.15 **2.67**
Spartan	Total Core	2.32 2.57	2.13 **2.43**	2.23 2.48	**2.18** 2.38	2.11 2.29
Standard Trucking	Total Core	2.24 2.43	**2.26** **2.43**	2.08 2.13	2.08 2.20	2.08 2.27
Transus	Total Core	2.12 2.43	2.09 **2.50**	1.98 2.29	2.02 2.43	1.96 2.43
Wilson Trucking	Total Core	2.33 **2.61**	1.93 2.29	**2.27** 2.47	2.16 **2.53**	2.14 **2.47**

** Averages calculated on basis of data for all carriers in category, not just those listed.
Scores at or above average appear in boldface.*

Keeping your promises. That's one thing that seems to impress shippers as much as any service or pricing aspect of their relationships with LTL carriers.

Leroy Fennewald, manager of traffic for Fiatallis North America in Carol Stream, Ill., has been using one of his LTL carriers for 25 years. They aren't the low price carrier, he says, "but my experience has been that they do what they say they will do without effort. Usually they get the job done with one phone call. They respond." Fennewald credits the "can do" attitude to the carrier's experienced personnel. "They've had people stay with them for long periods of time, so you're not talking to someone different every two months," he says. Fiatallis' local terminal manager, he adds, "is the type of guy you can call up and say, 'I need such and such done tomorrow,' and you can hang up the phone and, barring an earthquake, it will get done," he says. "They stand behind what they say they'll do."

For example, if the carrier knows it can't deliver to a market overnight, it will quote second-day service; too many carriers, he adds, promise the moon and fail to deliver. "The reliability factor," Fennewald says, "is extremely important."

Bill Thompson, vice president of Transmode, Inc., a warehousing and distribution firm in Dominguez Hills, Calif., cites a carrier whose service levels are consistent, whose organization is uniformly professional. "Their marketing and sales reps know what the latest innovation is in their industry. They are a leader, not a follower," he says. "And when they make a commitment, they live by it."

Thompson sees evidence of this each time a customer asks for a special delivery request. "I notify the rep of the various delivery criteria, according to what the customer has specified," Thompson says. "The rep then follows up with me to confirm that it's been accomplished."

REGIONAL LTL CARRIERS—WEST

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.38** **2.67**	**2.20** **2.47**	**2.31** **2.56**	**2.22** **2.53**	**2.20** **2.52**
Con-Way Western	Total Core	2.37 2.61	**2.26** **2.55**	**2.42** **2.58**	**2.26** 2.50	**2.22** **2.55**
DiSalvo Trucking	Total Core	2.13 **2.86**	2.00 2.43	1.95 2.43	1.89 2.29	1.94 2.43
G.I. Trucking	Total Core	2.06 **2.75**	2.09 **2.55**	2.07 2.45	1.99 **2.60**	2.02 **2.65**
Lynden Transport	Total Core	**2.38** 2.38	2.19 **2.50**	2.20 2.38	**2.29** 2.38	**2.21** 2.25
Motor Cargo	Total Core	2.26 2.46	2.14 2.08	2.18 2.38	2.17 2.23	2.12 2.38
TNT Bestway	Total Core	2.37 2.65	**2.21** 2.36	**2.39** **2.64**	2.21 2.36	2.14 2.32
TNT Reddaway	Total Core	**2.80** **2.89**	**2.57** **2.63**	**2.58** **2.67**	**2.64** **2.74**	**2.56** **2.65**
Viking Freight System	Total Core	2.34 2.50	2.05 2.30	2.30 2.51	2.10 2.43	2.14 2.46
Willig Freight Lines	Total Core	2.34 2.64	2.07 **2.67**	2.21 2.53	2.19 **2.60**	2.07 2.40

SURFACE PACKAGE CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.25** **2.38**	**2.24** **2.35**	**2.40** **2.57**	**1.98** **2.07**	**2.00** **2.08**
RPS	Total Core	2.16 2.36	**2.26** **2.53**	2.31 2.44	**2.12** **2.36**	**2.09** **2.31**
UPS	Total Core	**2.49** **2.48**	**2.36** **2.36**	**2.58** **2.59**	**2.10** 2.06	**2.12** **2.10**
U.S. Postal Service	Total Core	1.86 1.92	2.00 2.12	2.10 2.18	1.67 1.78	1.72 1.79

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

TL CARRIERS

Hassle-free, excellent equipment, low rates with reliable, claim-free service. They are the finest carrier I've ever worked with." That's how Jeff Fischer, national transportation manager for Fuji Film in Elmsford, N.Y., describes his top truckload carrier. Other TL shippers evaluate their carriers in similar fashion. "For the size of their fleet, our carrier's service is very dependable," says Reva C. Meade, supervisor of rates & auditing for Singer Furniture in Roanoke, Va. "They have good quality equipment, the sales force is aware of any problems that arise and they work to resolve them and take steps to prevent recurrence."

James J. Paule, traffic manager for Spangler Candy Co. in Bryan, Ohio, says his top carrier "consistently covers the loads to which they commit without problems such as equipment failures, missed delivery appointments or difficult drivers. It's a real pleasure to do business with them."

Truckload shippers also place a high premium on equipment and systems. "Every reefer in our carrier's fleet is a 48′ x 102″ high-cube trailer," says Starr H. Lloyd, general transportation manager for Gorton's of Gloucester in Gloucester, Mass. "That's important to us because we cube out before we weigh out. I don't have to worry about them coming in with a 45′ or 46′ unit."

Another advantage for Gorton's and its customers is the carrier's satellite tracking system. "Just yesterday a truck left here with a shipment bound for a big customer of ours in Indianapolis," Lloyd says. "The customer called just after it left and wanted the driver to stop in Canton, Mass., to pick up a load of coffee. We called the carrier, and they sent a satellite message to the driver diverting him into Canton." Such a swift reaction would have been impossible without the satellite system, Lloyd says, and making the extra pickup should help Gorton's make points with an important customer.

TRUCKLOAD CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.32** **2.53**	**2.20** **2.65**	**2.36** **2.51**	**2.19** **2.40**	**2.18** **2.38**
Ace Transportation	Total Core	**2.41** **3.00**	2.09 2.17	2.26 2.00	**2.20** 2.00	2.00 1.84
Anderson Trucking	Total Core	2.27 2.45	**2.24** 2.53	2.34 **2.62**	2.08 2.24	2.12 2.20
Builders Transport	Total Core	**2.46** 2.44	2.15 2.00	2.33 2.38	2.00 1.94	2.12 2.07
Burlington Mtr. Car.	Total Core	2.19 2.33	**2.20** 2.33	2.23 2.33	**2.23** 2.33	2.00 2.17
Contract Freighters	Total Core	**2.49** **2.69**	**2.24** 2.44	**2.67** **2.82**	**2.51** **2.82**	**2.28** **2.57**
Crete Carriers	Total Core	**2.40** **2.79**	**2.33** 2.63	**2.46** **2.54**	**2.22** **2.50**	**2.32** **2.75**
CRST	Total Core	2.16 2.25	1.93 1.92	2.26 2.25	2.04 2.09	2.01 1.84
Dart Transit	Total Core	2.00 1.75	1.89 1.50	2.26 2.00	1.91 1.25	1.84 1.75
Freymiller Trucking	Total Core	**2.61** **2.75**	**2.22** 2.50	**2.45** **2.75**	**2.31** **2.50**	**2.23** 2.25
Inway	Total Core	2.29 **2.62**	**2.24** 2.46	**2.43** **2.72**	2.17 2.33	2.15 2.27
J.B. Hunt Transport	Total Core	2.29 2.32	**2.50** 2.62	**2.61** **2.65**	**2.28** 2.39	**2.20** 2.29
Jones Motor Co.	Total Core	2.00 2.00	2.10 2.00	2.00 2.00	2.00 2.25	2.00 2.00
Ligon Nationwide	Total Core	2.00 2.00	**2.27** **2.67**	2.06 2.33	2.02 **2.67**	2.10 2.33
Marten	Total Core	**2.42** **2.75**	**2.33** **3.00**	**2.42** **2.75**	**2.25** **2.75**	**2.25** **3.00**
Mercer	Total Core	2.26 2.35	**2.27** **2.70**	2.26 2.45	**2.34** **2.55**	**2.27** **2.45**
MNX	Total Core	2.22 2.50	1.95 2.17	2.13 2.09	2.03 2.09	2.02 2.17
M.S. Carriers	Total Core	**2.33** 2.25	**2.33** 2.38	**2.42** 2.38	**2.36** 2.25	**2.36** 2.25
National Freight	Total Core	1.71 2.42	1.65 2.21	2.00 2.42	1.82 2.16	1.65 2.37
New Prime	Total Core	1.67 2.40	2.17 2.60	2.17 2.40	**2.67** **3.00**	**2.28** **2.80**
PFT/Roberson	Total Core	**2.34** 2.50	**2.20** 2.00	2.00 1.50	2.17 2.00	2.00 2.00
Poole Truck Line	Total Core	2.22 2.32	2.10 2.15	2.10 2.11	**2.21** 2.29	**2.19** 2.25
Ranger	Total Core	**2.51** **2.70**	**2.38** 2.58	**2.40** **2.55**	**2.49** **2.65**	**2.46** **2.78**
Roadrunner Trucking	Total Core	**2.39** 2.34	**2.22** 2.17	**2.48** 2.34	**2.34** 2.34	**2.51** **2.50**
Schneider National	Total Core	**2.45** **2.74**	**2.21** 2.37	**2.42** **2.58**	**2.24** **2.54**	**2.24** 2.37
Swift Transport	Total Core	**2.42** **2.69**	**2.38** **2.69**	**2.45** 2.19	**2.35** **2.75**	**2.26** **2.75**
Tri-State	Total Core	**2.66** **2.82**	**2.34** 2.39	**2.44** **2.84**	**2.33** **2.57**	**2.29** **2.65**
Werner	Total Core	**2.70** **2.88**	2.11 2.25	**2.75** **2.75**	2.17 **2.50**	**2.20** **2.50**

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

SPECIALIZED CARRIERS

The tag "specialized" often means these carriers are judged by a different standard than others. They may be expected to provide specialized equipment or services. Or perhaps specialized information or personnel are required.

Ron Thornton, traffic supervisor for Philips Lighting in Danville, Ky., says one of his carriers has been providing specialized, innovative service for almost a dozen years. First there was the idea for a single rep to handle all the shipper's needs. Then there was a continuous move program, in which Philips works with the carrier to match inbound and outbound loads, improving equipment utilization and on-time performance while reducing costs. The continuous move program gives Philips greater control over the dispatch and routing of drivers, Thornton says. The program has evolved into a service resembling dedicated contract carriage.

The carrier also shines in another area crucial to Philips: claims handling. "In our industry, claims are a giant pain in the neck," Thornton says. The carrier is quick to pick up the phone if a clarification is needed, he says, and, now that they have developed a good rapport, "many times they will do a claim based on our word."

Carl D. Hoy, distribution manager for Cargill, Inc. in Dayton, Ohio, says one of his bulk carriers hauls nearly 10,000 loads of corn sweetener and starch products every year. Last October, as part of a formal quality process Cargill has used since 1985, the company selected this carrier as its top trucker on the basis of error-free performance versus loads hauled. The carrier is at the top of the pack again this year. Hoy says monthly feedback based on Cargill's quality measurements is partly responsible for the carrier's success. "They do an outstanding job of communicating with us," he says, "and they are responsive to our varying needs."

HIGH VALUE PRODUCTS CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total**	**2.44**	**2.14**	**2.42**	**2.12**	**2.40**
	Core	**2.65**	**2.49**	**2.51**	**2.42**	**2.52**
Allied Van Lines	**Total**	2.19	**2.15**	2.30	2.05	2.14
	Core	2.25	2.38	2.38	2.13	2.25
Bekins Van Lines	**Total**	2.00	1.91	2.00	2.09	2.00
	Core	2.50	2.00	2.25	2.25	2.25
Mayflower Transit	**Total**	2.25	**2.33**	2.17	**2.17**	**2.42**
	Core	2.60	**2.60**	2.20	2.40	**2.60**
North American	**Total**	2.28	**2.19**	2.25	**2.19**	2.21
	Core	**2.73**	**2.50**	**2.68**	**2.50**	**2.59**
United Van Lines	**Total**	**2.71**	2.13	**2.61**	2.08	**2.63**
	Core	**2.75**	**2.57**	2.29	2.29	2.50

HHG CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total**	**2.42**	**2.33**	**2.43**	**2.37**	**2.35**
	Core	**2.67**	**2.59**	**2.64**	**2.62**	**2.57**
Allied Van Lines	**Total**	**2.58**	**2.40**	**2.53**	**2.56**	**2.51**
	Core	**2.91**	**2.59**	**2.78**	**2.83**	**2.78**
Atlas Van Lines	**Total**	**2.42**	2.23	**2.50**	2.31	**2.35**
	Core	**2.73**	2.36	**2.64**	**2.64**	**2.64**
Bekins Van Lines	**Total**	2.05	2.22	2.16	2.05	1.89
	Core	2.29	**2.67**	2.57	2.29	2.00
Burnham Service Co.	**Total**	2.17	2.17	2.33	2.17	2.17
	Core	2.25	2.50	2.25	2.25	2.25
Graebel Van Lines	**Total**	**2.50**	2.27	**2.58**	**2.58**	**2.58**
	Core	2.43	2.33	2.57	**2.71**	**2.71**
Mayflower Transit	**Total**	2.22	**2.33**	2.33	2.17	2.13
	Core	**2.69**	**2.69**	2.63	**2.63**	2.50
North American	**Total**	**2.47**	2.31	2.26	**2.37**	**2.40**
	Core	2.61	**2.65**	2.44	2.56	2.56
United Van Lines	**Total**	2.39	2.30	**2.53**	**2.37**	**2.39**
	Core	2.56	2.52	**2.68**	2.40	2.40

BULK MOTOR CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total**	**2.23**	**2.06**	**2.29**	**2.18**	**2.14**
	Core	**2.53**	**2.31**	**2.52**	**2.34**	**2.35**
Bulk Materials	**Total**	2.00	**2.20**	2.00	2.10	2.00
	Core	2.50	**3.00**	2.50	**2.50**	**2.50**
Chemical Leaman	**Total**	2.21	1.91	**2.34**	2.09	2.10
	Core	**2.58**	2.00	2.50	2.33	**2.36**
DSI Transports	**Total**	2.13	1.94	**2.31**	2.06	1.88
	Core	2.50	2.00	2.50	**2.50**	2.00
Groendyke Transport	**Total**	**2.23**	**2.33**	2.23	2.15	**2.15**
	Core	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**
Matlack	**Total**	**2.31**	2.03	**2.39**	**2.20**	**2.23**
	Core	**2.56**	2.25	**2.56**	2.25	2.31
Miller Transporters	**Total**	**2.25**	2.00	**2.30**	**2.26**	**2.26**
	Core	2.43	2.14	**2.71**	**2.43**	**2.57**
Montgomery Tank	**Total**	**2.36**	**2.33**	**2.48**	**2.38**	**2.29**
	Core	**2.62**	**2.62**	**2.77**	**2.46**	**2.46**
Tri-Mac	**Total**	2.14	2.05	1.95	2.10	2.00
	Core	2.30	2.30	1.90	2.10	2.00

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CARGO & EXPRESS CARRIERS

Express *n*: A system for the prompt and safe transportation of parcels, money, or goods at rates higher than standard freight charges."

The way Webster defines "express," it's no wonder shippers expect, and usually receive, top-notch service from these carriers. Tracking shipments is almost universally mentioned as an example.

"Our carrier can track a package within a half hour," says Will Jolliff, purchasing agent for Axis Communications in Anchorage, Alaska, "and I can track freight that's being sent to me without going back to the shipper. It condenses that search to minutes rather than days." Jolliff tells of a package he was expecting from Atlanta. Though he had no airbill number, he called the carrier, which searched its pickup records. It turned out the company hadn't even mailed the package. "I thought that was extraordinary," he says.

You don't have to be a big shipper, with big volumes, to get big service, either. R.E. Wright Associates, an environmental consulting firm, ships 25 packages a day. "The whole nature of our business is fast-paced," says Patricia Reeser, corporate purchasing agent. "Because of the nature of environmental remediation, emergency response is often necessary. Whether it's a replacement part for field equipment, meeting a job proposal deadline or rushing supplies to a branch office, our carrier is there."

When customers of Allen-Bradley Co. request Saturday delivery, "usually it means a customer has a production line down," says Senior Traffic Coordinator Ruth Sele. Her express carrier initially ran about 80 percent on-time on Saturday. When she complained, the local terminal manager read his staff the riot act. Ever since, each Allen-Bradley package is audited on Friday night to catch any Saturday deliveries, and on-time performance has zoomed back up to nearly 100 percent.

DOMESTIC AIR EXPRESS CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total	**2.39**	**2.20**	**2.34**	**2.16**	**2.14**
	Core	**2.58**	**2.43**	**2.52**	**2.35**	**2.31**
Airborne Express	Total	**2.40**	**2.42**	2.28	**2.20**	2.13
	Core	**2.73**	**2.73**	**2.62**	**2.45**	**2.41**
BAX	Total	2.11	2.06	2.11	**2.18**	**2.15**
	Core	2.21	2.27	2.13	2.28	2.22
DHL Worldwide	Total	**2.41**	2.11	2.26	2.11	2.12
	Core	**2.63**	2.38	2.36	2.31	2.24
Emery Worldwide	Total	2.14	2.00	2.12	2.14	2.10
	Core	2.27	2.39	2.32	**2.47**	2.30
Federal Express	Total	**2.79**	**2.29**	**2.72**	**2.55**	**2.48**
	Core	**2.84**	**2.43**	**2.78**	**2.66**	**2.57**
TNT Worldwide	Total	2.15	2.00	2.13	2.12	2.09
	Core	2.50	**2.75**	**2.75**	**2.75**	**2.75**
United Parcel Service	Total	**2.47**	**2.36**	**2.43**	2.01	2.02
	Core	2.53	**2.44**	2.48	2.04	2.08
U.S. Postal Service	Total	1.99	2.12	2.01	1.56	1.64
	Core	2.00	2.25	2.17	1.42	1.75

INTERNATIONAL AIRFREIGHT & EXPRESS CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total	**2.34**	**2.20**	**2.31**	**2.16**	**2.12**
	Core	**2.55**	**2.46**	**2.49**	**2.33**	**2.28**
Airborne Express	Total	2.16	2.19	2.12	2.10	2.07
	Core	2.41	**2.59**	2.28	2.25	2.22
BAX	Total	2.21	2.14	2.17	**2.25**	**2.18**
	Core	2.47	**2.56**	2.39	**2.59**	**2.53**
DHL Worldwide	Total	**2.35**	2.05	2.24	2.15	2.09
	Core	**2.57**	2.34	2.44	**2.43**	**2.34**
Emery Worldwide	Total	2.00	2.09	2.07	2.10	**2.12**
	Core	2.20	**2.47**	2.25	2.30	2.25
Federal Express	Total	**2.76**	**2.31**	**2.67**	**2.43**	**2.34**
	Core	**2.85**	**2.49**	**2.73**	**2.55**	**2.43**
Nippon Cargo Airlines	Total	2.24	2.04	2.17	1.92	1.91
	Core	2.50	2.25	**2.50**	1.75	2.00
TNT Express	Total	2.23	2.18	2.15	**2.20**	2.09
	Core	2.29	2.43	2.29	**2.57**	**2.43**
United Parcel Service	Total	**2.45**	**2.35**	**2.47**	1.92	1.96
	Core	2.51	2.39	**2.51**	1.96	2.00

DOMESTIC ALL-CARGO AIR CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total	**2.34**	**2.15**	**2.36**	**2.17**	**2.15**
	Core	**2.51**	**2.44**	**2.54**	**2.34**	**2.30**
Airborne Express	Total	2.21	**2.15**	2.17	2.08	2.01
	Core	2.27	**2.66**	2.42	2.22	2.06
BAX	Total	2.18	2.10	2.21	**2.20**	**2.19**
	Core	2.38	**2.47**	2.36	**2.42**	**2.39**
Emery Worldwide	Total	2.09	2.03	2.13	2.06	2.07
	Core	2.26	2.41	2.32	2.32	2.26
Federal Express	Total	**2.70**	**2.16**	**2.70**	**2.53**	**2.44**
	Core	**2.81**	2.41	**2.79**	**2.69**	**2.58**
United Parcel Service	Total	**2.40**	**2.29**	**2.45**	1.93	2.00
	Core	2.49	2.40	2.52	1.98	2.07

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AIRLINES

Would you want to work for your airfreight carrier?

Maybe that's as good a Quality measure as there is for carriers in all modes. "My airfreight carrier provides instant tracking, on-time delivery and it has had three claims in the last four years," one shipper says. "They give us responsive, quality oriented service. It's a company I would like to work for—a class act."

Airfreight shippers want the basics, but they also are impressed by the "extras."

John Benz, traffic manager for Bemis Specialty Films in Oshkosh, Wis., remembers the time fog delayed an unusually "hot" shipment to Texas. "Our carrier's rep physically hand-carried our shipment on commercial flights in order to meet our delivery needs," Benz says. "The person had to stay overnight in San Antonio without so much as a toothbrush. That's commitment!"

Other "extras" aren't as dramatic, but may be just as important. One carrier is "flexible and creative" in helping its customer develop a European DC. Another provides hazardous materials training for its customer. One shipper is impressed with a carrier's response to unexpected requests, "like when we call and say, 'The shipment's ready now, and we close in 15 minutes.' " Another says that one of the scheduled airlines distinguishes itself by providing refrigerated service.

Knowledgeable sales reps with good communication links to customers are also prized. "We have a rep who handles all problems for us, including weather delays, customs problems and billing errors," says Bonnie Coyne, traffic specialist with SPS Technologies in Jenkintown, Pa.

"We have two good carriers," adds Lee Iyer, materials manager for Ohline Corp. in Gardena, Calif., "but I give an edge to one because of their reps' commitment to follow up on shipments and keep my customer and me posted on its movement."

DOMESTIC PASSENGER/CARGO AIRLINES

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.20** **2.40**	**2.17** **2.40**	**2.20** **2.38**	**2.14** **2.25**	**2.13** **2.24**
Alaska Airlines	Total Core	**2.31** **2.67**	**2.58** **3.00**	**2.27** **2.67**	**2.33** **2.33**	2.10 2.00
American Airlines	Total Core	2.06 2.05	2.09 2.19	**2.23** 2.33	2.05 2.00	2.10 **2.24**
Continental Cargo	Total Core	2.13 2.00	2.15 2.25	2.00 2.00	2.03 2.00	1.97 2.00
Delta Airlines	Total Core	**2.36** **2.55**	**2.20** 2.37	**2.38** **2.53**	**2.25** **2.37**	**2.28** **2.32**
Northwest Cargo	Total Core	2.03 **2.43**	2.03 **2.40**	1.97 2.00	2.00 2.20	2.00 2.20
Southwest Airlines	Total Core	**2.50** **2.75**	**2.43** **2.71**	**2.26** 2.14	**2.45** **2.43**	**2.32** 2.14
United Airlines	Total Core	2.19 **2.45**	2.14 2.36	2.19 **2.55**	**2.14** 2.18	2.06 2.00
USAir	Total Core	**2.22** **2.67**	**2.19** **2.63**	2.10 **2.43**	2.11 **2.75**	**2.15** **2.75**

INTERNATIONAL PASSENGER/CARGO AIRLINES

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	Total Core	**2.26** **2.56**	**2.07** **2.35**	**2.18** **2.43**	**2.07** **2.30**	**2.02** **2.30**
Air Canada	Total Core	**2.38** **3.00**	**2.09** **2.67**	**2.27** **2.67**	**2.07** **2.67**	**2.19** **2.33**
Air France	Total Core	**2.27** 2.50	2.03 **2.38**	2.17 2.38	**2.11** 2.29	**2.07** **2.43**
Alitalia	Total Core	2.13 2.50	2.00 **2.50**	2.07 **2.50**	1.93 **2.50**	1.87 **2.50**
American Airlines	Total Core	2.13 2.27	2.02 **2.47**	**2.22** 2.40	2.03 2.20	1.96 2.14
British Airways	Total Core	2.25 **2.78**	**2.11** **2.56**	2.17 **2.67**	2.03 **2.63**	1.94 **2.38**
Continental Cargo	Total Core	1.93 2.33	1.93 2.33	1.96 2.00	1.93 **2.33**	1.96 **2.33**
Delta Airlines	Total Core	**2.47** **2.71**	**2.27** **2.57**	**2.37** **2.64**	**2.36** **2.50**	**2.26** **2.57**
Japan Airlines	Total Core	**2.38** 2.55	**2.07** 2.27	**2.21** 2.36	**2.14** 2.27	**2.07** **2.36**
KLM	Total Core	**2.47** **2.71**	**2.19** **2.43**	**2.39** **2.64**	**2.36** **2.57**	**2.28** **2.50**
Korean Airlines	Total Core	2.04 2.20	2.00 2.10	2.00 2.10	2.00 1.89	1.91 1.89
Lufthansa	Total Core	**2.58** **2.86**	2.06 **2.43**	**2.42** **2.62**	**2.09** 2.25	2.00 **2.33**
Northwest Cargo	Total Core	2.21 2.30	2.03 2.10	2.06 2.30	2.00 2.11	1.93 2.11
SAS	Total Core	**2.31** 2.50	**2.13** 2.00	**2.21** 2.00	**2.07** 2.00	2.00 2.00
Singapore Airlines	Total Core	2.25 2.40	**2.15** 2.20	2.16 2.20	**2.11** 2.00	2.00 2.00
Swissair	Total Core	**2.59** **3.00**	**2.29** **2.50**	**2.24** **2.75**	**2.24** **2.50**	**2.24** **2.50**
Trans World Airlines	Total Core	1.91 2.25	1.91 2.00	2.00 2.25	1.91 2.00	1.86 2.00
United Air Lines	Total Core	2.24 **2.63**	1.95 2.25	2.14 2.38	2.03 2.14	1.97 2.14
USAir	Total Core	2.10 2.33	2.00 2.17	1.93 2.17	1.74 2.17	1.70 2.17

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AIR FORWARDERS

Communication. That's what shippers want from their airfreight forwarders. Rich Shields, corporate traffic controller at Teradyne, Inc. in Boston, says his freight forwarder is quick to acknowledge a mistake—and that makes it easier to recover from.

"I don't know of anyone that has a 100 percent on-time delivery rate, but this is one company that responds and is proactive when it comes to informing all parties of a failure," he says. "This enables us to reset customer expectations." For example, Teradyne may be shipping a critical part, and the customer must bring people in to receive and install it. If Teradyne knows they'll be late, at least they can prevent the customer from incurring some of those additional costs. "No one likes to see a carrier be late," Shields says, "but you can be mature about it."

Lee Iyer, materials manager for Ohline Corp. in Gardena, Calif., says that while both his forwarders are great companies to work with, "I give the edge to one because of their sales rep's commitment to follow up a shipment all the way through delivery and keep both my customer and me posted on its movement."

Cheri Knutowski, service parts supervisor for Pillar Technologies in Hartland, Wis., says her airfreight forwarders help save her and the company time and money by staying on top of complicated export paperwork. One forwarder she uses has a specialist in letters of credit who monitors changes in the L/C and compares them with the commercial invoice, shipping instructions and other documents. This diligence keeps Pillar from having to pay stiff penalties for discrepancies, Knutowski says. She also appreciates it when forwarders stick to their quoted rates. "We've had situations where companies have quoted us a rate," she says, "and when I get the bill, I don't know whether they forgot we had a quote or what."

DOMESTIC AIR FORWARDERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total** **Core**	**2.18** **2.61**	**2.07** **2.48**	**2.10** **2.37**	**2.09** **2.42**	**2.11** **2.44**
Air Express Int'l	**Total** **Core**	2.09 2.38	2.06 **2.50**	2.04 2.27	1.98 2.23	2.04 2.17
Associated Air Frt.	**Total** **Core**	**2.28** **2.67**	2.04 **2.80**	**2.32** **2.80**	**2.13** **2.80**	**2.17** **2.80**
Danzas	**Total** **Core**	2.17 **2.67**	1.95 2.33	2.03 2.17	**2.20** **2.50**	**2.15** **2.50**
Dynamic Air Frieght	**Total** **Core**	**2.22** **3.00**	2.00 **3.00**	**2.25** **3.00**	2.00 **2.50**	**2.13** **2.50**
Eden Air Freight	**Total** **Core**	**2.27** **2.67**	**2.18** **3.00**	2.09 2.33	**2.09** **2.67**	2.00 **2.67**
Fritz	**Total** **Core**	**2.22** 2.29	2.00 2.29	**2.13** 2.29	1.91 2.00	1.96 1.86
Intertrans	**Total** **Core**	**2.31** **2.80**	**2.08** **2.60**	**2.23** **2.80**	**2.31** **2.80**	**2.31** **2.80**
LEP Profit Int'l	**Total** **Core**	2.16 2.23	**2.13** 2.31	2.02 2.23	**2.11** **2.54**	2.02 2.38
Lynden Air Freight	**Total** **Core**	**2.37** **2.80**	**2.11** 2.40	**2.21** **2.60**	**2.11** 2.40	**2.32** **2.80**
Pilot Air Freight	**Total** **Core**	**2.27** **2.63**	**2.28** **2.63**	**2.25** **2.50**	**2.33** **2.63**	**2.31** **2.63**
Seko	**Total** **Core**	**2.18** 2.00	2.05 2.00	**2.16** 2.20	2.05 2.00	2.05 2.00
Skyway	**Total** **Core**	**2.25** **3.00**	**2.17** **3.00**	**2.17** **3.00**	**2.17** **3.00**	**2.25** **3.00**
Surfair	**Total** **Core**	**2.18** **2.67**	2.00 2.40	1.75 1.80	1.94 2.20	1.94 **2.60**

INTERNATIONAL AIR FORWARDERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total** **Core**	**2.13** **2.43**	**2.10** **2.41**	**2.11** **2.36**	**2.07** **2.39**	**2.04** **2.34**
Air Express Int'l	**Total** **Core**	**2.21** **2.45**	**2.23** **2.50**	**2.17** 2.32	**2.17** 2.36	**2.13** 2.32
Associated Air Frt.	**Total** **Core**	**2.29** **3.00**	2.00 2.33	**2.15** 2.33	1.93 2.33	2.00 2.33
Danzas	**Total** **Core**	**2.19** 2.33	2.07 2.17	2.08 2.25	**2.13** 2.25	2.02 2.08
Fritz	**Total** **Core**	2.00 2.10	**2.11** **2.40**	**2.11** 2.20	2.00 2.10	2.00 2.10
Kintetsu World Exp.	**Total** **Core**	**2.14** **2.44**	2.03 2.40	2.07 **2.44**	2.03 **2.50**	1.96 2.30
Keuhne & Nagle	**Total** **Core**	2.00 2.14	2.08 2.14	2.03 2.14	2.00 2.00	1.97 2.00
LEP Profit Int'l	**Total** **Core**	**2.17** **2.70**	2.09 **2.60**	2.06 2.20	**2.09** **2.40**	2.00 **2.44**
MSAS	**Total** **Core**	1.91 2.13	1.95 2.25	1.90 2.25	1.91 2.25	1.85 2.25
The Myers Group	**Total** **Core**	1.80 2.25	1.90 2.25	2.00 2.25	2.00 2.33	2.00 2.33
Nippon Express	**Total** **Core**	**2.13** 2.40	2.04 2.40	**2.18** **2.60**	**2.17** **2.80**	**2.19** **2.80**
Panalpina	**Total** **Core**	**2.32** **2.72**	**2.22** **2.67**	**2.23** **2.61**	**2.14** **2.78**	**2.04** **2.59**
Pilot Air Freight	**Total** **Core**	**2.23** **2.57**	**2.19** **2.43**	**2.20** **2.57**	**2.15** **2.57**	**2.28** **2.71**
Schenkers Int'l	**Total** **Core**	2.06 2.33	2.06 2.33	**2.11** 2.33	2.02 2.17	1.98 2.25

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

OCEAN CARRIERS

Quality of the sales force is the factor mentioned most often by ocean shippers when asked what sets carriers apart.

"The carrier we use has knowledgeable staff throughout their organization," says Gene Seigal, operations manager for Safeskin Corp. in San Diego. "They provide consistent, reliable service." A manager of international transportation says his carrier is on time, has good customer service, responds quickly to problems and questions and has a knowledgeable sales staff. "They have got their act totally together," he says.

"Our carrier has an excellent sales force. They react quickly in regard to requested rates and information, and they make frequent personal calls," says one shipper. Another says her carrier "is the only one we deal with that always has good containers, prompt information on pickups, efficient check-ins and interested personnel who are willing to take responsibility."

"Our carrier is consistently on schedule, and its sales people are operations-oriented, so they don't promise what they can't deliver," adds Jeffrey Amos, president of Jeffrey Amos & Associates in Long Beach, Calif. "They also have a willingness to negotiate rates."

Rate "flexibility" is mentioned by many shippers as a trait they look for in an ocean carrier. Del Brahm, president of Brahm & Krenz, a freight forwarder in Wauwatosa, Wis., singles one carrier out for its "competitive freight rates on oversize and RoRo cargo." Kelly A. McAleese, inventory manager for Polypro International in Minneapolis, Minn , says her carrier is "willing to offer guaranteed pricing via contract." Charlene Luo, traffic administrator for Everex Systems in Fremont, Calif., says she prefers one ocean carrier for its on-time service, cooperative attitude – and its willingness to take independent action. "They understand our business," she says.

OCEAN CARRIERS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total**	**2.33**	**2.21**	**2.24**	**2.19**	**2.17**
	Core	**2.60**	**2.46**	**2.47**	**2.43**	**2.43**
APL	**Total**	**2.38**	2.17	**2.43**	2.16	2.15
	Core	2.59	2.27	**2.68**	2.27	2.36
ANZDL	**Total**	**2.41**	2.17	2.21	**2.41**	**2.24**
	Core	**2.62**	2.31	2.23	**2.62**	2.38
ACT/PACE	**Total**	2.25	2.05	2.16	2.11	2.16
	Core	2.57	2.29	**2.57**	**2.71**	**2.71**
ACL	**Total**	2.28	2.15	2.21	2.13	2.10
	Core	2.30	2.40	2.20	2.00	2.20
Cast North America	**Total**	2.13	**2.27**	2.20	**2.27**	**2.20**
	Core	2.40	**2.80**	**2.60**	**2.80**	**2.60**
CGM French Line	**Total**	2.28	**2.21**	2.08	2.08	2.12
	Core	2.50	2.38	2.38	2.25	2.38
Columbus Line	**Total**	**2.50**	2.17	**2.40**	2.30	**2.30**
	Core	**2.75**	**2.63**	**2.63**	2.38	**2.63**
Crowley Maritime	**Total**	**2.65**	**2.21**	**2.36**	**2.36**	**2.27**
	Core	**2.86**	**2.50**	**2.64**	**2.50**	**2.43**
Evergreen Lines	**Total**	2.20	**2.37**	2.16	1.98	1.98
	Core	2.45	**2.60**	2.30	2.15	2.25
Hanjin	**Total**	2.32	**2.41**	2.14	2.09	2.09
	Core	2.43	**2.71**	2.29	2.14	2.14
Hapag/Lloyd	**Total**	**2.49**	**2.29**	**2.49**	**2.48**	**2.33**
	Core	**2.79**	**2.47**	**2.74**	**2.76**	**2.61**
Ivaran Lines	**Total**	2.19	2.05	1.95	1.95	1.95
	Core	**2.67**	2.00	2.00	2.00	2.00
K Line	**Total**	2.30	**2.24**	**2.31**	2.06	2.06
	Core	2.56	2.22	**2.56**	**2.44**	**2.44**
Lykes Line	**Total**	**2.34**	2.03	2.18	**2.24**	2.12
	Core	2.55	2.00	2.45	**2.64**	2.36
Maersk Line	**Total**	**2.47**	2.15	**2.46**	**2.31**	**2.23**
	Core	**2.63**	2.33	**2.75**	**2.50**	2.33
Matson Navigation	**Total**	**2.50**	2.13	**2.43**	**2.21**	**2.29**
	Core	**2.86**	2.29	2.43	**2.43**	**2.43**
Mitsui O.S.K. Line	**Total**	2.31	**2.28**	2.16	2.13	2.16
	Core	2.54	**2.54**	2.38	**2.54**	**2.46**
NYK Line	**Total**	**2.35**	**2.26**	2.23	**2.19**	**2.26**
	Core	**2.62**	2.38	**2.54**	**2.46**	2.38
Nedlloyd Lines	**Total**	2.18	2.18	2.19	**2.19**	2.12
	Core	**2.78**	**2.78**	**2.75**	**2.75**	**2.75**
Neptune Orient Lines	**Total**	**2.55**	**2.65**	**2.45**	**2.70**	**2.55**
	Core	**2.78**	**2.89**	**2.56**	**3.00**	**2.89**
OOCL	**Total**	2.09	2.15	2.06	1.97	2.00
	Core	**2.67**	**2.67**	2.33	**2.50**	**2.67**
P&O Containers	**Total**	**2.45**	**2.35**	2.17	**2.44**	**2.44**
	Core	**2.63**	**2.50**	**2.57**	**2.71**	**2.86**
Polish Ocean Lines	**Total**	1.94	**2.31**	1.94	1.81	1.94
	Core	2.00	**2.75**	1.75	1.50	2.00
Sea-Land Service	**Total**	**2.35**	2.14	**2.26**	**2.19**	**2.21**
	Core	**2.73**	**2.50**	**2.50**	**2.50**	**2.52**
Senator Line	**Total**	1.93	**2.33**	1.93	1.93	2.14
	Core	1.80	**3.00**	1.80	2.00	2.40
Zim Container	**Total**	2.29	**2.22**	2.09	**2.26**	**2.30**
	Core	**2.75**	**2.75**	2.25	**2.75**	**2.50**

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

RAIL CARRIERS

Aggressive is an adjective not traditionally used to describe the nation's major railroads. Yet it is invoked more frequently when shippers discuss the railroads of today. Clearly, these carriers are not the same animals they were a dozen years ago. They are increasingly flexible, responsive and service-oriented.

To wit: George Murphy, rail fleet coordinator for Amoco Chemical in Chicago, recently ordered a car from a carrier and had an uneasy feeling that the customer service rep who handled the transaction did not understand the requirements. Twenty minutes after he hung up, a supervisor called back to say that the order didn't look right to her, and she thought she should check it out. It turned out to be wrong. "That saved me so much headache," Murphy says. "As a shipper, being proactive is something you prize in a carrier."

While the railroads are busy ironing out the problems and perceptions of the past, they also are pressing every advantage they have in the present, and shippers are responding. "Our carrier understands who the competition is and they are aggressive enough to negotiate rates that take freight off the highway and put it onto the rail," says William Price, distribution manager for U-Haul's Eastern Redistribution Center in Horsham, Pa.

"Our carrier has excellent local switching, an EDI linkup, provides hopper car equipment as requested and has an excellent means to track and recap transit performance," adds Carl D. Hoy, distribution manager for Cargill, Inc. in Dayton, Ohio.

The success of long-haul rail service often depends on the ability of two or more carriers to work together, and shippers applaud when carriers excel in this area. "We recognized one railroad due to their willingness to interface with other rail carriers in a prompt, efficient manner," says John J. Fay, vice president of Korea Express in Secaucus, N.J.

MAJOR RAILROADS

		On-Time Perf.	Value	Equip. & Opers.	Customer Service	Admin. & Staff
AVERAGE*	**Total** **Core**	**2.09** **2.17**	**2.09** **2.21**	**2.07** **2.14**	**2.07** **2.20**	**2.06** **2.19**
Burlington Northern	**Total** **Core**	**2.14** **2.26**	2.04 2.19	2.06 **2.15**	**2.07** 2.19	1.88 1.98
CSX Transportation	**Total** **Core**	2.01 2.04	2.05 2.06	**2.21** **2.19**	**2.20** **2.26**	**2.08** 2.13
Canadian National	**Total** **Core**	1.95 2.10	**2.14** **2.33**	2.03 **2.22**	**2.11** **2.44**	**2.08** **2.44**
Canadian Pacific	**Total** **Core**	2.08 2.14	2.03 2.15	1.91 2.00	**2.09** **2.31**	1.94 **2.23**
C&NW	**Total** **Core**	2.04 2.09	**2.22** **2.50**	1.98 2.00	**2.08** **2.23**	2.04 2.14
Conrail	**Total** **Core**	**2.17** **2.30**	2.05 **2.23**	**2.13** **2.22**	2.00 2.15	**2.07** **2.30**
Delaware & Hudson	**Total** **Core**	1.80 2.00	1.84 2.00	1.83 2.00	1.72 2.00	1.83 2.00
Florida East Coast	**Total** **Core**	**2.37** **2.33**	2.06 **3.00**	**2.11** **3.00**	2.05 **2.33**	2.05 **2.33**
Grand Trunk Western	**Total** **Core**	1.96 **2.25**	2.08 **2.33**	1.88 1.67	**2.07** **2.50**	**2.11** **2.50**
Illinois Central	**Total** **Core**	2.00 **2.20**	**2.12** **2.36**	1.97 **2.17**	2.02 **2.27**	**2.12** **2.47**
Kansas City Southern	**Total** **Core**	1.97 2.00	**2.13** 2.11	1.97 1.63	2.06 **2.20**	1.94 2.00
Norfolk Southern	**Total** **Core**	**2.35** **2.40**	**2.15** 2.20	**2.23** **2.21**	**2.19** **2.22**	**2.21** **2.30**
Santa Fe	**Total** **Core**	**2.10** 2.03	2.05 2.10	**2.11** 2.10	2.02 1.97	2.03 2.00
Soo Line	**Total** **Core**	2.13 **2.46**	**2.13** **2.31**	1.97 **2.27**	2.05 **2.38**	2.03 **2.38**
Southern Pacific	**Total** **Core**	1.79 1.87	1.93 2.03	1.85 1.85	1.78 1.90	1.94 2.03
Union Pacific	**Total** **Core**	**2.28** **2.20**	**2.26** **2.38**	**2.32** **2.34**	**2.29** **2.35**	**2.31** **2.31**
Wisconsin Central	**Total** **Core**	**2.43** **2.67**	**2.30** **2.33**	**2.27** **2.33**	**2.17** **2.50**	**2.26** **2.67**

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

STRIKING GOLD

Carriers Show Their Mettle

Shippers have strong feelings about which modes of transportation are providing quality service, and which are just going through the motions.

If there is one event in the Olympics that can best be compared to the freight transportation industry, it has to be the decathlon. To excel in this grueling event, the athlete must have strength, speed, flexibility and endurance. For a freight transportation company to win the praise—and the business—of a customer, it must be fast, dependable, cost-competitive, service-conscious and innovative.

According to a six-part reader poll DISTRIBUTION conducted over several months, each modal group has its strengths and weaknesses.

- Air shippers like the service, but they think rates are too high.
- LTL shippers are pleased with rates and service, but want simpler tariffs, more accurate billing and more attention to problem resolution.
- TL shippers are satisfied with on-time service and the willingness to develop partnerships, but customer service remains a problem.
- Rail shippers are surprisingly satisfied with their rates, but they say their service problems need industry-wide attention.
- Intermodal shippers love their rates, and most are happy with transit times they say are competitive with truck service. Their complaints are with poor equipment and unknowledgeable sales people.
- Ocean shippers have no complaints about schedules and transit times, but they think carriers must improve their pricing by taking more independent action.

This Quality Poll is quite different from DISTRIBUTION's Quest for Quality survey that very precisely reports how shippers rate specific carriers (see page 32). This Quality Poll is intended to take a broader look at how shippers think each transportation mode performs and how its quality should be measured.

Each month, from January through June, we asked our readers to complete a form in the magazine that required detailed information about how they measure the performance of all carriers in a specific mode of transportation. We wanted to know whether or not they had a formal quality program, and if so, what were the criteria? If they did not, we wanted to know why. We also asked our readers to weigh 10 or 11 performance criteria and to tell us which activities carriers in that mode performed well and which needed improvement. Finally, we asked our readers to name any carriers they recognized for quality performance, and why.

For more than half the nearly 500 respondents in our poll, this task was easy, because they already have formal quality measurement programs that track such information. The other half had to think about transportation quality in highly specific terms. This was a difficult task for many of them, and we appreciate their effort. And even though this group said that an ongoing formal quality program would require too much time and personnel, we hope this exercise and the following report will encourage them to look into such a quality evaluation process. Quality for shippers and carriers comes only from relentless efforts to constantly improve.

continued

EXTRA EFFORT
The LTL Difference

Just doing a good job isn't enough for today' shippers. They want their carriers to be problem solvers, and they reward those that go the extra mile.

LTL shippers in our quality poll expect good service and reasonable rates from their carriers, and the vast majority of these shippers believe LTL carriers provide these basics. And while these shippers base about 60 percent of their carrier selection decision on such factors as on-time PU&D and competitive rates, they clearly appreciate those carriers that understand the meaning of extra effort.

"Roadway actually went to another major carrier's terminal and picked up material we needed desperately to save three days of production downtime," says Monty Vogue, warehouse supervisor for Morton International in West Alexandria, Ohio.

For many shippers and LTL carriers, such high performance is fast becoming a normal part of their business arrangements.

"Our JIT environment with Nissan often requires us to provide sameday service," says Elwin Proctor, a supply chain manager with KSG Inc., in Antioch, Tenn. "Central Transport has picked up shipments as late as 5:00 p.m. and delivered to Nissan at 10 p.m. They have provided this service with just a phone call."

Shippers in our survey say they are willing to show their appreciation to such high-performance carriers with more traffic and a closer relationship with all carrier affiliates.

Harley Davidson's general manager for transportation in York, Pa., Tom Schwarz, says he has been using CF MotorFreight for 10 years, and that relationship has caused him to use other CF companies including CCX, CEX and Emery Worldwide. "All have delivered continuously improving, on-time delivery performance (97 percent) at extremely low damaged freight levels (0.1 percent)," says Schwarz.

The largest LTL carriers received the most comments in our survey, but shippers were equally complimentary about the services of many regional carriers.

Deborah Yemm, vice-president of Yemm & Hart, Ltd., in Marquard, Mo., appreciates Beaufort Transfer because it "serves us in a remote location when other carriers don't think we are worth the trouble."

Shippers especially like the extra services that many regional LTL carriers willingly perform. Chris Cooper, traffic manager for Paul Jeffrey Co. in Syracuse, N.Y., praises New England Motor Freight because it pre-books all delivery appointments from the local terminal, and it stretch-wraps and labels each pallet with important information such as the consignee, number of pieces, weight and delivery time.

More than half the shippers responding to this poll have formal LTL quality programs. Measuring carrier performance is a positive exercise intended to recognize the best, says William J. Dowling, executive vice president for Warehouse Distribution Services in Atlanta, Ga. Southeastern Freight Lines is at the top of his list with on-time delivery of 96.2 percent, no claims and 100 percent pickup efficiency.

There are only a few areas where LTL carriers as a group don't measure up. Shippers still believe tariffs and tariff rules are too complicated. They give LTL carriers low marks for billing accuracy, and they want LTL carriers to focus more on resolving problems.

Shippers with formal LTL quality programs:

Yes: 54% No: 46%

How LTL shippers weigh carrier performance:

29%	On time PU&D
19%	Competitive rates and contract prices
11%	Dependable schedules and transit times
8%	Claims-free service
6%	Ability to trace shipments
6%	Billing accuracy
5%	Ease of problem resolution
5%	Quality and supply of equipment
4%	Sales force knowledge
4%	EDI capability
3%	Simplicity of tariffs and rules

Three most common reasons shipper don't have LTL quality program:

1. Not enough personnel
2. Not enough time
3. Decision making is too decentralized

Five LTL carriers most often recognized in formal quality programs (in alphabetical order):

ABF Freight System
CF MotorFreight
Roadway Express
Overnite Transportation
Yellow Freight

Five LTL companies mentioned most often as "outstanding" by shippers (in alphabetical order):

ABF Freight System
CF MotorFreight
Roadway Express
TNT Holland
Yellow Freight

Three things LTL carriers do best:

1. On time PU&D
2. Competitive rates and contract prices
3. Ability to trace shipments

Three things LTL carriers must improve upon:

1. Simplicity of tariffs and rules
2. Billing accuracy
3. Ease of problem resolution

ON-TIME

The TL Bottom Line

As shippers increasingly consider TL carriers to be extensions of their operations, they are looking for carriers with near-perfect service.

On-time service and consistent transit times make up more than half of the carrier selection criteria for TL shippers in our survey. The reason service is so important for these shippers is that their TL carriers are often their lifeline to suppliers and customers.

"When we had an urgent need to avoid a production stoppage, Poole Truck Line provided two team drivers from Washington state to make a quick delivery," says M. B. Kellett, vice-president of manufacturing for Medical Disposables in Marietta, Ga. "Poole is a truckload carrier that has performed excellently during the last two years. It is now our sole TL carrier."

Dennis Webber, logistics manager for Interstate Brick in West Jordan, Utah, had a similar emergency. He turned to C. R. England & Sons. "We had a hot load that had to arrive in four-and-a-half days," he says. "C.R. England moved it 1,822 miles in two days."

The majority of these demanding shippers in our survey agree that TL carriers are meeting the constant challenge of on-time service.

"Werner Enterprises has been very responsive to our sometimes impossible needs," says Dale Sheehan, corporate transportation analyst for Conair Corporation in East Windsor, N.J. "Werner has helped immensely with our manufacturing facility, which is located in an out-of-the-way area."

Many shippers in our survey said they increasingly depend on TL carriers to be competitive with high service levels. William Wyssbrod, director of materials for Alsco, Co., a vinyl siding manufacturer in Olive Branch, Miss., says his company's markets are in the North, and that is where the competitors are located. "We have been able to beat these competitors with the on-time dependable service we have received from M.S. Carriers since they have been our primary TL carrier."

Ron Farquarson, traffic manager for Tru-Weld Grating in Wexford, Pa., says Mercer Transportation has improved his customer service.

"I ship from six locations across the U.S., and I have used Mercer at each one," says Farquarson. "They allow me to make solid service commitments to my customers."

Because of this dependence on TL carriers for good service, shippers look to them for long-term partnerships.

Monsanto Chemicals and Bee Line Trucking have formed a working partnership for Monsanto's hazardous transportation needs. Jim Champion, logistics manager for Monsanto in Sauget, Ill., says Bee Line's "drivers exhibit daily a total quality ownership for all moves."

While the largest and best known TL carriers were cited most often for their good service, the TL shippers in our survey named more than 130 carriers as *their* choice. Shippers obviously do not think that size has much to do with service.

Bruce C. Balchunas, director of operations for Northeast Warehouse & Distribution, Ltd., in Monson, Mass., picked Lydall Express of Manchester, Conn., as his top TL carrier. "They have an excellent support staff complemented by an equally efficient sales and logistics department that solves most problems before they happen," he says.

Shippers with formal TL quality programs:

Yes: 55% No: 45%

How TL shippers weigh carrier performance:

38% On time PU&D
13% Consistent transit times
11% Competitive rates and contract prices
8% Quality and supply of equipment
7% Claims-free service
6% Value of service regardless of price
5% Willingness to negotiate
4% Ease of problem resolution
3% Sales force knowledge
3% Satellite tracking capability
2% EDI capability

Three most common reasons shipper don't have TL quality program:

1. Not enough personnel
2. Decision making is too decentralized
3. Not enough time

Five TL carriers most often recognized in formal quality programs (in alphabetical order):

C.R. England & Sons
J.B. Hunt
Ranger Transportation
Schneider National
Werner Enterprises

Five TL companies mentioned most often as "outstanding" by shippers (in alphabetical order):

C.R. England & Sons
CRST
J.B. Hunt
Schneider National
Werner Enterprises

Three things TL carriers do best:

1. On time PU&D
2. Consistent transit times
3. Competitive rates and contract prices

Three things TL carriers must improve upon:

1. Ease of problem resolution
2. On-time PU&D
3. Sales force knowledge

SERVICE!

The Rail Shippers' Demand

Most rail shipments move over several railroads, so shippers want the rail industry to take a system-wide approach to providing better service.

Rail shippers know their carriers very well. Almost 60 percent of the shippers in our survey carefully track the quality of service their rail carriers provide, and they clearly have mixed feelings. They give the railroads good marks for competitive pricing. But shippers in our survey say reliable transit times are the most important variable in the rail carrier decision, and it is the one thing they are not getting. In fact, the rail portion of our 1992 Quality Poll produced more negative comments than any other. While some shippers had specific complaints about particular carriers, the peculiarities of our rail system are at the root of the problem. Many shippers are captive to one railroad for their origins and destinations. At the same time, the vast majority of rail movements are interlined with at least one other carrier.

Barry Recht, corporate manager of transportation operations for Babcock & Wilcox in Barberton, Ohio, explained the problem very well.

"No one railroad can be outstanding when all must interchange with each other," says Recht. "It is difficult for a shipper to assess the performance of individual rail carriers. A good performance by one carrier can be offset by a poor performance by the interline carrier. Our management doesn't care who did well, only that the entire move went well. The rail industry has yet to address this issue on a system-wide basis."

Other shippers in our survey were enthusiastic about their rail carriers, not just for their service but for their ability to operate so well in such a difficult industry.

Floyd Bergsma, owner of Frieslander Bank in Santa Ana, Calif., says his company has been involved in transportation and shipping throughout the world since the thirteenth century. He ranks three U.S. railroads as truly world class.

"CSX is one of the best transportation systems in America," says Bergsma, who also says the Union Pacific and the Norfolk Southern "give their all" to provide the best service. He compliments the U.S. rail industry for succeeding despite "1930-vintage rail rules" and for introducing "new blood with new ideas" to revitalize the rail industry.

While a number of shippers mentioned labor issues as a problem, many shippers said the individual efforts of rail workers was what impressed them the most.

Dennis Webber, logistics manager for Interstate Brick in West Jordan, Utah, said his company gets precisely what it needs from the Southern Pacific Lines (D&RGW) because of the people he deals with.

"The sales representative we deal with is responsive," says Webber. "He knows our company needs and works hard to fulfill our needs. This carrier also has one of the best, if not the best, trainmasters in the area. That makes a big difference."

Shippers that are served by more than one railroad were the most satisfied respondents in our survey.

Roly Worth, vice-president and general manager for Merchants Distribution in Des Moines, Iowa, says he is served by both the Norfolk Southern and the Burlington Northern. "Both companies embrace our company as a partner, marketing our services along with theirs and vice versa," says Worth.

Shippers with formal rail carrier quality programs:

Yes: 57% No: 43%

How rail shippers weigh carrier performance:

30%	Reliable transit times
22%	Competitive rates and contract prices
10%	Condition and supply of equipment
9%	Willingness to negotiate
8%	Sales force knowledge
5%	Easy, accurate tracing
5%	Billing and rating accuracy
5%	Value of service regardless of price
4%	Directness of routing
2%	Usefulness of EDI systems

Three most common reasons shipper don't have rail quality program:

1. Not enough personnel
2. Not enough time
3. Decision making is too decentralized

Five rail carriers most often recognized in formal quality programs (in alphabetical order):

Burlington Northern
CSX
Conrail
Norfolk Southern
Union Pacific

Five rail carriers mentioned most often as "outstanding" by shippers (in alphabetical order):

Burlington Northern
CSX
Conrail
Southern Pacific Lines
Union Pacific

Three things rail carriers do best:

1. Competitive rates and contract prices
2. Easy, accurate tracing
3. Directness of routing

Three things rail carriers must improve upon:

1. Reliable transit times
2. Willingness to negotiate
3. Condition and supply of equipment

PRICE & SERVICE

An Intermodal Double Play

The ranks of intermodal shippers are among the most satisfied in our survey. They receive exactly what they want: low cost and high service.

Intermodal shippers know what they want, and they aren't afraid to admit it. Price is their primary concern. In fact, it amounts to nearly one quarter of the total decision. But they also want service competitive with trucks, and they want one intermodal service provider to take full door-to-door responsibility.

This combination of demands is a lot to ask for, but intermodal shippers generally agree that their carriers are meeting these three needs.

"GST sees that all my requirements are met," says Richard M. Davis, transportation supervisor for Union Camp in Savannah, Ga. "Their rates are competitive, the shipments move on time and they provide tracing and accurate reports."

Many shippers still look to intermodal to fill very basic needs, and they often go directly to the railroads. J.D. Youngblood, manager of transportation for the G.E. Appliance Division in Louisville, Ky., says the Santa Fe meets his needs with "consistent, on-time delivery between Chicago and Los Angeles."

However, shippers increasingly are looking for more complex transportation services, and the ranks of third parties is the place shippers are finding what they need.

Tom Carpenter, assistant group manager for Georgia Pacific Corp. in Atlanta, Ga., says "Mark VII is clearly the most outstanding intermodal partner we deal with. They have simply become an extension of our logistics group. They understand our business as well as we do, sometimes better."

Burnell Bowling, pricing and service representative for General Foods in Northfield, Ill., sees his third party leading the way to innovation in intermodal services.

"The Hub Group had its sights set toward the future when it established Hub Logistics," says Bowling. "They provide us with tremendous amounts of information, and the ability to manage movements all over the country. They are a fine example of leadership in an industry seeking ways of being better."

Shippers used to dealing with motor carriers for high service needs are finding that their normal carriers are climbing aboard the intermodal bandwagon.

Marvin J. Robinson, manager of General Conference Transportation Service in Baltimore, Md., says Carolina Freight Carriers "have proven themselves to be an excellent intermodal carrier" even for international movements.

"Carolina has moved both LTL shipments and full containers with 100 percent success," says Robinson. "My consignees overseas have been delighted with the international service, rates and transit times. Their ability to handle documentation has been excellent as well."

According to our survey, one of the main criticisms shippers have about intermodal operators is that they do not make enough effort to learn about the shipper's business.

Donald C. Garland, director of transportation for Tri-Valley Growers in San Francisco, Calif., says his intermodal carrier is one company that is working to change this image.

"Riss Intermodal is developing the knowledge about canned goods shipments they need to understand our requirements and those of our receivers," says Garland.

Shippers with formal intermodal quality programs:

Yes: 55% No: 45%

How intermodal shippers weigh carrier performance:

22%	Competitive rates and contract prices
17%	Single-vendor, door-to-door service
15%	Transit times competitive with truck
9%	Responsiveness of dray operators
8%	Condition and supply of equipment
7%	Value of service regardless of price
7%	Easy, accurate tracing
6%	Sales force knowledge
5%	Billing and rate accuracy
4%	Size of origin/destination service area

Three most common reasons shipper don't have intermodal quality program:

1. Not enough time
2. Not enough personnel
3. Existing service excellent

Five intermodal carriers most often recognized in formal quality programs (in alphabetical order):

APL Land Transportation
Alliance Shippers
CSX Intermodal
The Hub Group
Mark VII

Five intermodal companies mentioned most often as "outstanding" by shippers (in alphabetical order):

Alliance Shippers
GST
The Hub Group
Mark VII
Riss Intermodal

Three things intermodal carriers do best:

1. Competitive rates and contract prices
2. Single-vendor, door-to-door service
3. Transit time competitive with truck

Three things intermodal carriers must improve upon:

1. Transit time competitive with truck
2. Condition and supply of equipment
3. Sales force knowledge

RATES MATTER

Shippers Want Flexibility

International trade is highly competitive, and ocean shippers want carriers that are willing to help them with the right rates and service.

Only one-third of the shippers in our survey reported they had quality measurement programs for their ocean carriers. That is the smallest percentage for any of the modes in our survey.

This small percentage is especially surprising because the ocean shippers are among the least satisfied respondents in our quality poll. Ocean shippers say they put the greatest weight on competitive rates, consistent sailings and container supply and quality when they select carriers. The only one of these selection criteria that the shippers say their carriers do well is providing consistent sailing schedules. Shippers give their ocean carriers low marks for value of service compared to price. They also find fault with their carriers for their unwillingness to take independent action to provide more competitive rates.

However, the shippers that do measure their ocean carriers are more satisfied. D.D. Wolfe, international transportation manager for Michelin Tire in Greenville, S.C., says his company has a detailed and ongoing quality process. "Columbus Lines was the winner of our last survey," says Wolfe. "They not only meet, they exceed all criteria for which ocean carriers are measured."

R.B. Banghart, senior logistics specialist for ICI Americas Inc., in Wilmington, Del., says his company carefully tracks its ocean carriers, and his top choice is Maersk. "Their operations are performed extremely well," he says. "Their containers are clean and ready for our use in shipping food-grade products. Their sailing dates are never changed. They are a superior carrier."

Schwinn Bicycle Company's Transportation Logistics Manager, Louis Paoli, also has stringent requirements. He says American President Lines meets them.

"We have a long-term relationship with APL," he says. "They have always provided space, containers and excellent schedules. Their dedicated stacktrain service is extremely reliable. Their sales people understand our requirements."

Barry Horowitz, director of international transportation for Nike, Inc., in Beaverton, Ore., says he has developed strong relationships with two ocean carriers – NYK and MOL.

"Both provide Nike with superior service quality," says Horowitz. "They have a degree of understanding of our business and their roles as service providers. Their personnel are of higher professional quality and our companies do business on a broad, worldwide basis."

The vast majority of shippers answering our quality poll this year said they depended primarily on the major U.S.- and foreign-flag carriers. However, a surprising number of small shippers said they depend totally on intermediaries to handle their ocean transportation.

A small shipper in Clearfield, Utah, says Viking Freight System, the California-based regional motor carrier with non-vessel operating common carrier (NVOCC) status, provides the service he needs.

"We ship a great deal of merchandise to Hawaii and Guam, and not always in large quantities," says Vern Waters of Ingram Warehousing. "Viking Freight System is the only carrier we have found locally that will carry our shipments."

Shippers with formal ocean carrier quality programs:

Yes: 33% No: 67%

How ocean shippers weigh carrier performance:

22%	Competitive rates & prices
19%	Consistent sailing schedules
11%	Container supply and quality
10%	Availability of door-to-service
9%	Number of sailings and ports
6%	Single carrier responsibility
6%	Sales force knowledge
6%	Willingness to take independent action
5%	Value of service
4%	Broad global coverage
2%	Handles LCL, Ro/Ro and breakbulk

Three reasons why shippers don't have ocean carrier quality programs:

1. Not enough time
2. No enough personnel
3. Existing service excellent

Five ocean carriers most often recognized in formal quality programs (in alphabetical order):

American President Lines
Maersk Inc.
NYK Line
OOCL
Sea-Land Service

Five ocean companies mentioned most often as "outstanding" by shippers (in alphabetical order):

American President Lines
Atlantic Container Line
Maersk Inc.
Neptune Orient Line
Sea-Land Service

Three things ocean carriers do best:

1. Consistent sailing schedules
2. Door-to-door service
3. Single carrier responsibility

Three things ocean carriers must improve upon:

1. Willingness to take independent action
2. Sales force knowledge
3. Value of service

LOWER RATES

Air Shippers Want Them

All airfreight companies—airlines, forwarders and integrated carriers—receive excellent marks for service, but shippers think rates are too high.

Airfreight shippers enthusiastically embrace the door-to-door service, highly dependable transit times and virtually global coverage they receive from their air carriers and forwarders. But shippers are not at all happy with rates for many airfreight companies. This is an important message for the air industry since rates are the second most important selection criteria shippers reported in our air carrier quality poll.

The air carriers that offered their customers good rates, in addition to good service, received a great deal of favorable comment from our respondents.

"Airborne Express does a quality job at a competitive price," says George Yarusavage, corporate manager of transportation for GTE in Stamford, Conn. "We give them over 2,500 packages a day and have negligible problems. No one can beat their commitment to quality."

Good service, of course, was the primary concern of all the shippers answering our survey. "We need, and receive 100 percent dependability," says Roz Lenzke, customer service manager of exports for Racine Industries, Inc. in Racine, Wisc., who says she must have it all from an airfreight company. "Emery Worldwide consistently has provided excellent service, a knowledgeable sales force, no errors *and* good rates."

The so-called integrated air carriers received the greatest number of comments in our survey, but scheduled airlines and forwarders also received their share of praise.

Jess Chance, terminal supervisor for Farmland Foods in Denison, Iowa, said that United Airlines had the rare combination of capabilities he needed. "UAL has specialized refrigerated service, competitive rates and adequate lift," he said.

Eugene Graves, manager of corporate transportation for Armco Advanced Materials in Butler, Pa., says shipping to Europe is a special concern of his: "Air France is the one carrier that offers quick, cost competitive service throughout most of Europe."

Forwarders received the most kudos for avoiding a common gripe with airfreight companies: problem resolution.

"Pilot Air Freight is an excellent communicator as well as a forwarder that delivers what it promises," says L. Angenola, traffic manager for Pirelli Armstrong Tire Co. in New Haven, Conn. "Their sales people are honest. If there is a service failure, we, the shipper, know about it first."

The last major complaint shippers in our survey expressed was that some air carriers still do not handle all sizes of freight from envelopes to LTL-size shipments. They want carriers that will take all their freight.

"Federal Express can move any size package anywhere," says J.M. Lepore, customer support/export coordinator for Questek, Inc. in Billerica, Mass. "Fed Ex has consistently exhibited superior service to my company over the past 10 years. The rates are extremely competitive with other airfreight carriers, the customer service is unparalleled, and their delivery commitments have never been compromised. In addition, Fed Ex has 'rescued' our freight from other carriers who could not meet our delivery requirements on more than a few occasions."

Shippers with formal air carrier quality programs:

Yes: 46% No: 54%

How air shippers weigh carrier performance:

21%	Dependable schedules and transit times
17%	Competitive rates and prices
16%	Door-to-PU&D
8%	Billing accuracy
7%	Broad geographic coverage
6%	Ease of problem resolution
6%	Accepts all size of freight
6%	EDI shipment status
5%	Sales force knowledge
5%	Multiple service levels
3%	Adequate airlift

Three most common reasons shipper don't have air carrier quality program:

1. Not enough time
2. Not enough personnel
3. Existing service is excellent

Five air carriers most often recognized in formal quality programs (in alphabetical order):

Airborne Express
BAX
Emery Worldwide
Federal Express
UPS

Five air companies mentioned most often as "outstanding" by shippers (in alphabetical order):

Airborne Express
BAX
Federal Express
Seko Air Freight
UPS

Three things air carriers do best:

1. Door-to-door PU&D
2. Broad geographic coverage
3. Dependable schedules and transit timess

Three things air carriers must improve upon:

1. Competitive rates and prices
2. Ease of problems resolution
3. Accepts all sizes of freight

QUEST FOR QUALITY
77
78
SOUTHEASTERN

ENCOURAGING CARRIERS TO GO FOR THE GOLD

Handing out quality awards to motivate carriers may seem trite, but for companies that take the process seriously, like Westinghouse, the rewards can be significant.

By E.J. Muller, Senior Editor

Westinghouse Electric Corporation, based in Pittsburgh, Pa., believes that its Carrier Quality Measurement Program has been a key factor in steadily improving transportation service levels. The company has had a formal quality recognition process in place since 1989, and during that time it's awarded 24 quality awards to vendors. This year, Westinghouse bestowed its coveted Gold Award on only 10 of its 90 transportation vendors. Winners were Roberts Express; Spartan Express; ANR Freight Systems; CF MotorFreight; Southeastern Freight Lines; Yellow Freight System; Atlas Van Lines; Avis Rent-a-Car; Roadway Package System, and Federal Express.

continued

"The incentive that the program gives to our carriers has helped us tremendously," says Westinghouse's Director of Transportation and Logistics Programs, Jeff Neubert. "Since we began the program, we've seen a dramatic increase in carriers' service levels."

If your company is considering such a program, be forewarned that creating and maintaining it is not easy. "This thing can really gobble you up," says Director of Transportation John Power. When the program was devised, he recalls feeling bad for the carriers, because everyone had different ideas about what should be measured. "It was undoubtedly challenging and time-consuming for the carriers," he notes. Unless you have a way of automating the process, incoming data from carriers can create an overload of paperwork.

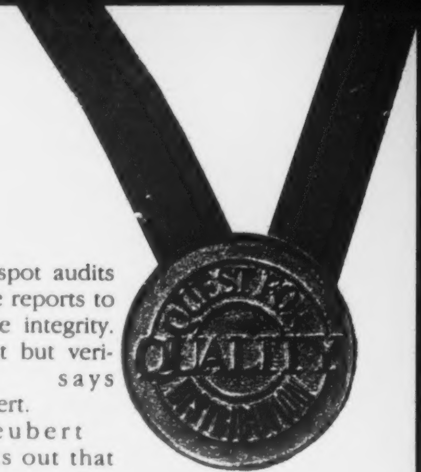
"In the past we requested raw data from the carriers," explains Neubert. "We'd then crunch the numbers ourselves. Because of the time it took, we only generated feedback for carriers twice a year." Today, however, carriers have upgraded their internal systems to the point where they can provide monthly pre-crunched reports. This enables Westinghouse to analyze performance more swiftly, and provide vital feedback on a monthly basis, leading to quicker identification of problems and solutions. Westinghouse performs peri-

> ***"Since we began the program we've seen a dramatic increase in carriers' service levels," says Jeff Neubert, Westinghouse's director of transportation and logistics programs***

Shipper Quality Awards

Shipper	Carriers Recognized
3M Co.	**A. Dule Pyle, Advance Transportation, American President Lines, A-P-A Transport, APL Land Transport, Averitt Express, Berger Transfer & Storage, Burlington Ocean Express, Canada Maritime, Ltd., Circle Freight Int'l, D&T Trucking, Federal Express, KLLM, Midwest Coast Transport, Motor Cargo, Norfolk Southern, Preston Trucking, Schneider National, Southeastern Freight Lines, TNT Holland Motor Express, TNT Reddaway Truck Line, Transport America, Viking Freight System, Wisconsin Central, Yellow Freight System**
Allied-Signal	**GE Capital Railcar Repair Services**
American Honda Motor Co.	**Customized Transportation, Inc.**
Arco Chemical	**Bulkmatic Transport, Enterprise Transportation, DSI Transports, Dana Transport, Crete Carrier Corp., FTR Transportation, Boncosky Transportation Services, Matlack, Swift Transportation, Younger Brothers, Highway Transport**
AT&T	**Airborne Express, Pilot Air Freight, CRST, Hall Systems, Consolidated Freightways, AAA Cooper Transportation, Federal Express, Heartland Express, Ring Transfer, South Bend Freight Line**
Baxter Healthcare	**Atlas Van Lines**
Brown & Williamson Tobacco	**Dayton Warehouses, Inc.**
Cargill	**Manfredi Motor Transit**
Chrysler	**Leaseway Transportation**
Corning	**Overnite Transportation, Schneider National**
Cryovac	**Southeastern Freight Lines**
Detroit Diesel	**ANR Freight System**
Fort Howard	**Schneider National**

Georgia Freight Bureau	Burlington Air Express, Southeastern Freight Lines, Roadway Express, J.B. Hunt Transport, Norfolk Southern, Federal Express, Sea-Land Service, Alliance Shippers, Manufacturers Consolidation Service
Glaxo	Viking Freight System
Hallmark Cards	Arkansas Freightways, Best Delivery Service, Contract Freighters, Inc., National Book Consolidators, Roadway Package System, TNT Red Star Express
Hercules Engines	Advance Transportation
Inland Steel	ABF Freight System
Kodak	Bekins Van Lines
Lever Brothers	Hub Group
Milliken & Co.	Spartan Express
Mobil Chemical	CSX Intermodal, Trailer-Mate
Monroe Auto Equipment	Cornhusker Motor Lines, Am-Can, Arkansas Freightways, Industrial Freight System, St. Johnsbury
Monsanto Chemical	Australia-New Zealand Direct Line
Motorola	North American Van Lines
Nabisco Foods	Walker Trucking
Olin Corp.	USA Truck, United DSI, Superior Carriers, Norfolk Southern, ACF Industries, Houston/California Distribution, BID Transportation
Pic 'N Pay Stores	Standard Trucking
Playtex Family Products	Walker Trucking
Quaker State	L.A. Express
S.C. Johnson Wax	Boncosky Transportation Services
Scott Paper	GST Corp., North American Van Lines
Signode	Southeastern Freight Lines
Sonoco Products	Estes Express Lines



odic spot audits of the reports to ensure integrity. "Trust but verify," says Neubert.

Neubert points out that the process has not been used to weed out the carrier ranks, so much as the support constant improvement among the company's preferred vendors. "Probably it's greatest benefit is in identifying problem areas," says Neubert. And the problem isn't always with the carrier.

> ***"Business has to gravitate toward the top performers...whether or not they wear little Quality buttons, I couldn't care less," says John Power, Westinghouse director of transportation.***

"The process helped us uncover a continuing packaging problem at one of our motor control centers. We were able to correct our packaging and as a result, claims decreased significantly."

Currently, four areas are measured: service (on-time deliveries), claims (damage-free deliveries), billing accuracy and an internal survey in which Westinghouse personnel offer personal evaluations. The formula used to calculate a carrier's Total Quality Index is:

.40 x **Service** + .40 x **Claims** + .10 x **Billing** + .10 x **Survey** = **TQI**.

- **Service** Index is calculated by dividing the number of on-time shipments by the total number of shipments handled by a carrier during the review period. "On-time" is determined by the carrier's stated service standards within specific lanes.
- **Claims** Index is the average of two numbers – the dollar amount of claims, and the amount of claims

continued

filed. The financial figure is achieved by dividing the dollar value of claims by revenue billed during the period. The numerical figure is arrived at by dividing the number of claims filed by the number of shipments handled. The two figures are then averaged.

- **Billing Accuracy** Index is actually monitored through third party, freight payment auditors Cass Logistics. The number of first pass correct bills is divided by the number of bills tendered to arrive at the index figure.
- **Survey** Index is based on twice-a-year internal surveys, in which the staff is polled about carriers' equipment availability, service and personnel. Responses are weighted according to the amount of business given to the carrier by each respondent.

Even the most formal Quality measurement processes have elusive components. "We're still trying to figure out how to measure heavy haulers," Power says. "You can't treat them the same way as an LTL carrier, and we haven't yet figured out the measurement criteria."

As befits a quality process, the standards keep rising. In 1991 carriers had to achieve a TQI rating of 95 percent or above to win a Gold Award. This year the Quality line will be raised to 96. Westinghouse tells carriers that figure is challenging, but can be attained with sufficient motivation and effort.

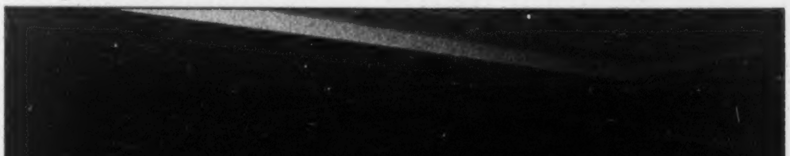
"Business has to gravitate toward the top performers," Power says. "Most of our Gold Award winners have a formal quality process, though it is not required in order to work with us. What matters is the quality of the service they provide—whether or not they wear little Quality buttons, I couldn't care less." ■

Beginning on page 84 is a list of shippers and the carriers they have recognized as part of their quality award programs.

Shipper Quality Awards

Shipper	Carriers Recognized
Spalding Sports Worldwide	**St. Johnsbury**
Spiegel	**CMX Trucking**
Springs Industries	**Standard Trucking, Roadway Express**
Storage Technology	**Burlington Air Express**
Texas Instruments	**Airborne Express**
TGI Friday's	**Airborne Express**
Westinghouse Electric	**Roberts Express, Spartan Express, ANR Freight System, CF MotorFreight, Southeastern Freight Lines, Yellow Freight System, Atlas Van Lines, Avis Rent-a-Car, Roadway Package System, Federal Express**

At a recent gathering, Westinghouse presented awards for 10 for its 90 transportation vendors who were winners of its Gold Award.



THE STATE OF QUALITY IN LOSISTICS

Logistics quality processes have been described as "immature," but these profiles of shipper quality efforts show that the movement has indeed taken hold.

Allied-Signal

Simple but fair measurements based on hard numbers are the key to Allied-Signal's carrier quality evaluation program.

The Aftermarket Group of Allied-Signal Inc. spent 18 months developing an approach to measuring carrier quality.

With a freight bill of around $26 million a year, it was determined to avoid the kind of subjective judgments that define so many quality programs—things like "driver appearance" and "carrier innovation." Instead, it stuck to hard numbers and good reporting, says Group Transportation Manager Carl A. Rossi.

The entire division simultaneously saw the need to improve customer service and track carrier performance in mid-1990.

Many quality programs penalize the biggest carriers by scoring them strictly on the number of incidents in a given period. Allied thought of a fairer way to measure performance. It would track instances of error per 100 shipments.

The company had tracked working days in transit and missed delivery dates, with totals calculated on a year-to-date basis. Now it wanted to know the exact number of shipments every carrier was handling each month, and how many were late.

At first, Allied tried extracting the numbers itself. This proved tedious, so Allied had the carriers supply the data in the desired format.

The key, says Rossi, was working with carriers who could be trusted to supply reliable information. Allied ended up saving administrative costs while receiving reports that were just as accurate as before.

To become eligible for the scoring process, Allied's carriers meet a number of strict criteria. They must provide the necessary scheduling and service coverage, not to mention high service standards. They must show how they will physically handle the freight. They must demonstrate a responsiveness to customer queries and problems. And they must offer competitive pricing—last on the list, but important all the same. After all that talk about service, Rossi says, "You've got to have a reality check."

By the end of 1991, the system was in place. These days, the Aftermarket Group generates monthly, easy-to-read tables showing each carrier's record of customer complaints, misrates, administrative errors, balance dues, past dues and service failures. Allied doesn't closely track freight claims, Rossi explains, because it files so few of them.

A few of the Aftermarket Group's 20 approved carriers have gone to extraordinary lengths to please the customer. Preston Trucking, the group's largest LTL carrier, provides overnight delivery throughout the Northeast from its break point in York, Pa., even though the carrier doesn't have a next-day standard for that facility. Preston's on-time record in the region is around 98 percent, Rossi says.

Eventually, Rossi might establish a certification process for carriers who reach a set level of excellence. But first the Aftermarket Group must come up with specific minimum standards for inclusion in its transportation program. Rossi didn't drop any carrier until it failed to respond to months of consistently poor service records. "We're not out to eliminate anyone immediately," he says. "We want our carriers to work with us."

—Robert Bowman

PAY A LITTLE NOW
INSTEAD OF A LOT LATER.

Preston Trucking is the Aftermarket group's largest LTL carrier, providing overnight delivery throughout the Northeast from its York, Pa., break point with on-time performance of 98 percent.

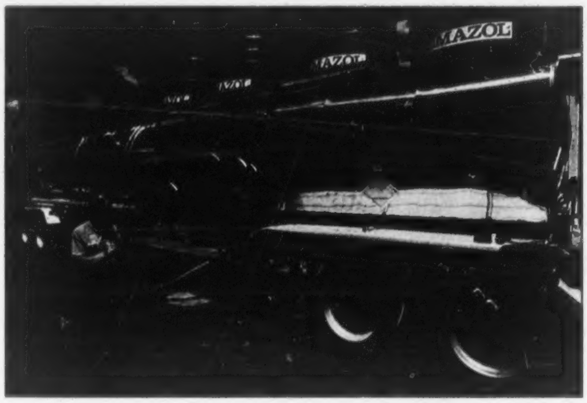
Hoechst Celanese

Hoechst's "Quality Partner Process" is the three-step method for choosing carriers who pass the strict criteria of this shipper.

Executives of 75 top motor carriers traveled to Charlotte, N.C., last December to hear one of their major customers read them the riot act on service. The Specialty Chemicals Group of Hoechst Celanese Corp. used the conference to announce a three-step "Quality Partner Process."

Together, the carriers were handling some 92 percent of Hoechst's outbound freight. They listened carefully as Hoechst executives explained the conditions under which they might continue to do so.

Products from the Specialty Chemicals Group include pulp and paper, polishes, resins, printing ink and advanced coating technologies. From plants in seven states and more than 100 shipping locations, it generates some 140,000 shipments a year—many are of hazardous materials and require extra care.



With encouragement from a top financial executive, good communication between shipper and carrier has helped to form a "team-building" partnership for Hoechst and its carriers.

The company calls its new quality program a "team-building" partnership which stresses good communications between shipper and carrier. But the actual service standards are set down unilaterally, in black and white. They fall into six main areas, according to Jimmie Hartsell, transportation manager of packaged goods.

In order of importance, they are: a good safety record, a quality process in place, financial stability, adequate insurance, operational characteristics (service coverage, equipment, drivers, transit times, rates), and computer capabilities. The last item isn't mandatory, Hartsell says, but it doesn't hurt to have EDI billing and tracing capability.

Hoechst's carriers will move through three distinct phases of selection, certification and continual improvement. "Selection" gets the carrier on the company's approved list but doesn't guarantee access to any freight. Certification is the real goal for those who want a substantial piece of Hoechst's business.

Carriers are graded on a points system in four categories: safety and health, overall quality, performance and administrative commitment. Each is worth a maximum of fifty points. Out of a possible 200, participants must score at least 180 in order to win certification. (They must also win at least three out of five possible points on each of the ten questions relating to safety.)

Hoechst determines the final score through a series of on-site audits, combined with monthly reports submitted by the carriers themselves. It pays special attention to overcharge settlements that take more than 30 days to finalize, and loss and damage claims that remained unpaid for more than 90 days. Billing and rating accuracy is another crucial area.

In a more general sense, Hoechst relies on a series of "values" to define its expectations. Hartsell divides these into three "Ps": people, process and performance. The first is self-evident, with emphasis on personal initiative and creativity. The second describes exactly how employees and company vendors can reach the third.

The focus, says Hartsell, "is on decision-making at the lowest practical level." At the December conference, it honored Central Transport driver Ernest Brice for demonstrating personal initiative. A customer had instructed Brice to unload his chemicals into the wrong holding tank. Brice, who knew the product and its requirements, refused. "Had he followed instructions, there would have been a major incident," recalls Hartsell. "The mixture of chemicals could have caused a reaction."

Last December was merely the kickoff for a program that is still in its infancy. Hoechst is planning a "mini-conference" for all of its drayage companies. And it's educating public warehouse facilities, many of which choose their own carriers for outbound transportation.

No transportation quality program can succeed without the support of a top financial executive. Wayne Docherty, vice president-finance and administration, says Hoechst is happy to make an up-front investment in quality, in expectation of big returns down the road.

"People talk in terms of the cost of quality," Docherty says, "but we expect to reduce internal costs caused by non-productive work in following up mistakes."

—Robert Bowman

continued

Olin Corp.

Approved carriers for Olin must meet strict requirements in five areas, yet a report card is still kept to monitor performance.

Each carrier in Olin Corp.'s evaluation program starts out with a perfect score. But a single safety incident could knock it off the company's list of approved vendors.

Stamford, Connecticut-based Olin Corp. is a major shipper of chlorine, caustic soda and other chemicals used in manufacturing. Almost all are classified as hazardous materials. The company relies on its Distribution Supplier Quality Awards to keep close tabs on more than 100,000 outbound shipments a year, says Fred Hauschild, manager of distribution safety and operations.

Winners receive the customary engraved plaque along with an invitation to dinner at company headquarters, "where they sit through a boring speech I give them," says Hauschild. But the real purpose of the five-year-old program is to guarantee absolute service reliability and the safe transportation of sensitive freight.

It begins with tough standards for designation as an approved carrier. Olin insists on five things: a minimum of $5 million in liability insurance, a satisfactory rating with the U.S. Department of Transportation, proper operating authority, proof of financial viability and a clean safety record.

Once a carrier clears those hurdles, Olin starts keeping score. From a base of 100, it subtracts points for missed delivery appointments and "accidents" that result in spills. A serious incident is worth up to three points, Hauschild says, and that's enough to lose Olin's business.

In 1991, none of the company's best carriers scored less than 97.9 for the year, while a couple posted a perfect 100. A score of 95—worth an A-minus on a college term paper—isn't good enough for Olin. "It's a very narrow range," admits Hauschild. "The top carriers are less than a point apart."

Despite a reliance on numbers, Olin leaves room for subjective judgments. It's careful to account for mistakes which aren't the carrier's fault, as well as the severity of the incident. And it considers a wide variance in number of shipments handled under the program—from Olin's minimum annual threshold of 1,000, to more than 30,000 for the biggest carriers. The greater a carrier's exposure, the more leeway it has. Hauschild says Olin follows the "80-20" rule in doling out business: 80 percent of its volumes are carried by 20 percent of the contracted carriers.

In a perfect world, carriers would have no accidents and deliveries would be 100 percent on time. In fact, a handful of Olin's customers allow no room at all for missed appointments. The rest are a bit more generous, with delivery windows of an hour or two.

TEFLON PACKING
ANGLE VALVES
Olin

Leaving no room for substandard performance, Olin tracks its carriers' handling of hazardous materials partially through CHEMTREC, a nationwide emergency response network.

The company has no independent means of tracking carrier performance. It depends entirely on public information, customer complaints and notification of problems by the carriers themselves—even lost points are the result. Hauschild says Olin usually finds out anyway. "We tell the carriers, 'If there is a problem, we'd better learn about it first from you.' "

Olin's quickest line of communication is CHEMTREC, the chemical industry's nationwide emergency response network. Whether the incident occurs on a rural road or superhighway, during rush hour or dead or night, Olin gets the message. "We're very confident that there are few things happening out there that we don't know about," says Hauschild.

There's no room in the chemicals business for substandard performance. Olin has dumped two carriers in the last two years. "They didn't last long enough to go very far," Hauschild recalls. "All it took was a couple of major safety incidents, and they were gone."

A single spill, however minor, leads to automatic probation. One carrier was released following several minor mishaps which resulted in the spillage of a few gallons of hazardous chemicals. To Olin, it was proof enough that the carrier lacked a proper safety training program.

Olin publishes quarterly reports on service quality, based in part on information supplied by the carriers themselves. Recognition goes to those vendors with the fewest number of demerits for the year.

For Olin, the best isn't always good enough. The company gave no award for LTL transportation in 1991, Hauschild notes.

—Robert Bowman

Subaru of America

In 1988, Subaru started to devise a rating system for carrier quality. With its complex scoring system in place, it has weeded out 72 carriers.

Four years ago, distribution of automotive parts was a "bastard division" of Subaru of America, Inc. Now it's considered so important that the company has a separate traffic department, complete with rigorous carrier evaluation program, for parts alone.

"Our industry is so heavily geared toward customer sales now," says Tom Leimkuhler, national traffic manager, parts distribution and logistics. "And the movement of parts is so tied into the sale of a car."

In 1988, he got the job of centralizing Subaru's after-market parts distribution system and devising a means of grading carriers on quality.

Leimkuhler came up with a program which assigns points to every conceivable aspect of domestic carrier service. Each month, Subaru of America issues a monthly report card with 100 possible points, divided into nine objectives. They range from the obvious to the intangible.

Few carrier grading systems get as specific as Subaru's. Pickup and delivery performance are worth up to six points each.

On-time delivery is worth 30 points. Subaru's objectives vary according to mode, Leimkuhler says. For air, the full 15 points are awarded to carriers delivering at least 98-percent on time. For surface carriers, the minimum "perfect" performance rate is 97.5 percent.

Invoicing carries a value of 15 points, given to carriers who make no errors during the review month. Another 13 points fall into carrier personnel response, with five points for quality of sales calls; five points for "general helpfulness"; two points for verbal and written proof of delivery, and one point for shipment tracing response.

There's no room for error in the claims category, worth a total of 20 points. Carriers get the full 20 if no loss or damage claims are filed during the month; they automatically lose 10 if there are any claims at all. The remaining 10 points relate to the handling of claims. If a claim is settled, the carrier gets four points; if denied, it gets nothing. If settled within 25 days, score six more points; if longer, zero.

Subaru can accept the occasional late shipment, Leimkuhler explains, but the slightest bit of damage is unacceptable. It dreads the prospect of customers forced to wait an extra week for a replacement part backordered from Japan.

Rounding out the carrier scorecard are financial stability and innovation, each worth a maximum of 10 points. The latter category is especially tricky, Leimkuhler says. A carrier can only win the five points if it does something extraordinary during the month, such as rushing an emergency shipment or coming up with equipment at a moment's notice.

With the competitive nature of the auto industry, it was important for Subaru to be sure automotive parts were delivered on time. "The movement of parts is so tied into the sale of a car."

Copies of the monthly report cards go out to the carrier at both the national and regional levels. Subaru follows up by meeting with carrier representatives to discuss where they went wrong, and how they might improve. Then, at year's end, the company tallies its results and hands out awards. The winners are those vendors who come closest to the magic number of 1,200 in each mode of transportation.

No one has achieved that level yet. Subaru's best air carriers are still about 10 percent off the mark, Leimkuhler says. Regional surface carriers come a bit closer. The top national surface carriers range from 20 to 30 percent below a perfect score. Leimkuhler attributes their lower numbers to longer transit times and greater volumes.

Roadway Express, Inc. was named Subaru's National Surface Carrier of the Year for the third straight year. Con-Way Southern Express won Regional Surface Carrier of the Year; Federal Express was the best air carrier, and Summit Express was named Dedicated Delivery/Contract Carrier of the Year.

The point isn't to save money on distribution. Subaru is willing to spend more to keep the customer satisfied, and reap the benefits further down the line. "We fly a lot more product than most people do," notes Leimkuhler. "We've got a huge airfreight bill."

Leimkuhler swears by Subaru's complex scoring system as the best way to measure carrier performance. "This is our Bible," he says. "It's a tremendous tool."

—Robert Bowman

continued

Union Camp

Positioning itself for future trade, Union Camp expects to implement the European-based ISO 9000 standards at each of its plants by 1993.

Nobody told Union Camp Corp. that it had to conform to ISO 9000 quality requirements. In fact, when the big producer of paper, packaging and chemicals first announced its intentions three years ago, most customers didn't know what it was talking about.

Even today, relatively few major U.S. corporations have adopted the sweeping criteria developed by the European-based International Standards Organization. But Union Camp's container division, which makes corrugated cardboard boxes for everything from color TVs to sensitive chemicals, saw the need for decisive action. "We wanted to capture the marketplace five to 10 years from now," says Steve Holladay, division manager of quality systems. "We had to be leaders in quality management and customer focus."

An exhaustive audit of Union Camp's customer base revealed that some of the biggest names—companies like Du Pont and Exxon—were drawing their internal requirements from ISO's 9000 series of production and service standards. Union Camp vowed to do the same. In January of 1991, the container division announced it would adopt the 9000 standards at all 27 of its plants by the end of 1993.

The "9000" designation actually covers several categories of standards for ISO certification. The numbers 9001-9003 describe declining levels of difficulty, with 9001 the highest. 9004 is a set of guidelines for implementing the entire series, and for exceeding ISO's minimum standards. Holladay says Union Camp went for 9001 certification at four of the first five plants to undergo the process.

Richmond, Va., was first, followed by Lafayette, La.; Sabine, Texas; Lancaster, Pa., and Lakeland, Fla. Stan Lange, general manager of the Lancaster plant, says the process took two years to complete at his location alone. "We had a quality process in place," he recalls. "Even with that, it was still like reinventing the wheel."

Most of the 9001 requirements are familiar to quality-minded companies. Anyone, for example, can halt the Union Camp assembly line if a problem crops up. More importantly, the standards tell how to determine whether a problem exists in the first place. Each work station has its own employee log and quality manual; everyone at the station is required to read it and sign it.

The basic idea behind the 9000 standards is creation of a self-operating system. "You can take people out of one plant and put them in any similar plant," Lange says, "and they could run it without any previous experience." The concept applies everywhere from order taking to the shipping dock.

As in the case of production, ISO doesn't tell the company how to benchmark carrier performance. It merely requires clear communication of expectations—and the close monitoring of every single shipment. In the past, says Holladay, Union Camp wouldn't always bother to tell a carrier when service began to slip. Removal of that carrier from the approved list could come from out of the blue. Now there are no surprises.

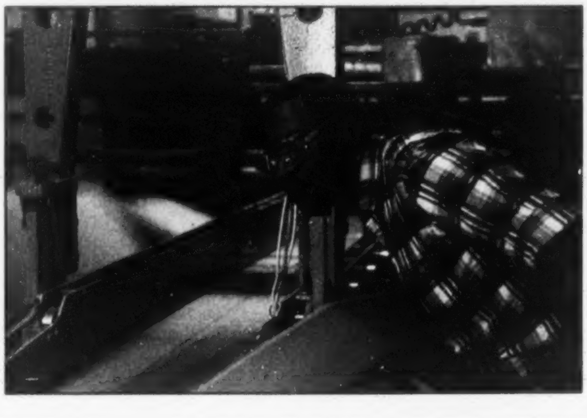
The criteria for certification are developed by a "quality steering committee" consisting of five members of Union Camp management. Carriers are audited and certified in four primary areas: quality of equipment, on-time pickup and delivery, reaction time to requests for equipment, and downtime due to equipment or driver problems.

Often a Union Camp audit will lead to recommendations for improvement. But when the carrier's performance has fallen below acceptable limits, it is immediately removed from the approved list until it takes corrective action. There's no grace period, Lange says.

Individual plants are given plenty of leeway to choose their own carriers. That's a hallmark of the ISO standards—the ability to adapt to local needs. A plant may use as few or as many carriers as it needs, as long as it keeps Holladay apprised of the reasons behind its choices.

Union Camp's container division is bringing along additional plants as fast as it can. But all are keenly aware of the growing importance of ISO standards in the U.S.—and the need to catch up with European competitors. Says Lange: "It's going to be a requirement of companies doing business in Europe after 1992."

—Robert Bowman



Adopting ISO 9000 standards positions Union Camp to play a major role in future international trade. "We wanted to capture the marketplace five to 10 years from now."

THE STATE OF QUALITY IN LOSISTICS

Logistics quality processes have been described as "immature," but these profiles of carrier quality efforts show that the movement has indeed taken hold.

Airborne Express

Instead of going directly to customers for suggested areas of quality improvement, this carrier saved time by simply looking within itself.

Airborne Express' 1992 Quality Partner Plan takes the bull by the horns. It's a document devised by the company to answer every customers' questions about its Quality process. Airborne took it upon itself, using Baldrige Award guidelines, and provided the answers to what it thought would be the most commonly-asked questions. "Enough customers wanted to initiate joint Quality programs," says Vice President, Quality Development, Ray Berry, "that we figured this would satisfy their needs."

As Berry sees it, satisfying customer needs is what Quality is all about. Although the company has had a quality process in place since 1980, Berry admits that until 1987, the process was internally focused, ensuring that Airborne employees adhered to corporate standards. Independent consultants were hired to examine operating procedures, and they reported back that "you can't measure quality on your yardstick. You have to measure what customers want."

That brought about a new mindset at the Seattle-based express company and international freight forwarder: one with an external, not an internal focus.

Where in the past the company's computerized measuring tools monitored internal processes, the focus has now expanded to include unannounced on-site field audits. "When we started these audits it was pretty tough on our offices. Not many passed," says Berry. Since the early stages, performance has dramatically improved. More than 85 percent of Airborne's international offices now pass the stringent audit.

As the top person in charge of Quality at Airborne, Ray Berry spends most of his time dealing with customers. Most of the time he's fielding questions about the company's quality process. "Most of our business is with corporate accounts," he says, "and I'd say the breakdown is about 50/50 between those that have a quality program and are trying to determine if our standards are compatible with theirs, and those companies who are just beginning to set up a process."

Berry's time is also spent as point man for APEX—Airborne's Program for Excellence. It's the method whereby customer problems are solved. According to Berry, it was challenging to get started because it required integrating departments from across the company that had previously worked in isolation.

If, for example, an auditor uncovered a certain office making too many billing errors, the auditor takes the situation to Berry, who puts together a team of various departmental managers. It might combine people from the office in questions, customer service reps or MIS. The team analyzes the situation, uncovers the problem, and formulates a solution.

According to Berry, there's only one goal: getting employees to focus on 100 percent customer satisfaction. "If we can get our people to internalize that one thought, then all the measurements and standards have achieved their purpose," he says. "The goal is to get people to use their common sense, and we try to create an environment in which they are allowed to do that."

—E.J. Muller

continued

The Flying D
KLM
AIRBORNE EXPRESS

Airborne is intent on satisfying customer needs through steps taken in its Quality Partner Plan. In 1987, it started to focus on outside improvement instead of internal.

Alliance Shippers

Alliance was "encouraged" to adopt a formal quality process by one of its biggest customers. Now it's running with the ball.

Alliance Shippers, Inc. wasn't exactly self-motivated when it implemented a formal quality process nearly four years ago. The shippers' agent was nudged in that direction by an exclusive contract with Procter & Gamble.

Alliance was well on its way to embracing the quality craze. "We were probably doing about two-thirds of what a formalized quality process requires," says Jay Hirst, vice president-traffic. But for a huge customer like P&G, two-thirds wasn't enough.

It was November 1988, and the shipper had just signed over responsibility for its intermodal domestic shipments to Alliance. Hirst says P&G saw enough "raw" quality in the agent's organization to seal the deal. Afterwards, it encouraged Alliance to adopt a full-blown quality process.

Drayage firms must meet rigorous standards if they want to stay in Alliance's good graces. "We want to allow the best to come to the surface," says Vice President Jay Hirst.

So, drawing on the teachings of quality guru Dr. W. Edwards Deming, Alliance launched a "total quality" process, complete with formal statistical process controls and Deming's "Fourteen Points of Excellence." Later it mixed in elements of Phillip Crosby's Quality College curriculum and other quality programs.

The new emphasis on statistics enables the company to determine exactly when it is straying from its own standards. At the same time, Alliance dived into the alphabet soup of quality, forming a TCP (Team Circle Process) to determine the CBA (current best approach) to any problem. It emerged with a concept known as TPS (The Perfect Shipment), a promise to customers that every intermodal shipment will be picked up on time and delivered on schedule with an accurate freight bill.

Selling the program to staff was the biggest challenge, Hirst says. Alliance's 14 regional operations centers and 41 sales locations throughout North America were accustomed to doing things a certain way. They weren't keen on fixing a system that wasn't broken. "It's one thing to go through the motions," says Hirst. "It's another to embrace the process. We had to gain their confidence until they could see results."

Next, Alliance recruited its carriers. Railroads were an easier sell than motor carriers, Hirst says, because they've been statistically oriented for years, partly in response to the demands of United Parcel Service, a huge customer.

In the end, truckers had no choice but to fall in line – if they wanted to keep Alliance as a customer. Under a program dubbed "The Perfect Drayage," Alliance restructured its truck contracts to conform to the tenets of quality. Drayage contractors now must carry cargo insurance of at least $100,000 per box, obtain permission before incurring extra charges due to changes in service, show proof of authority to haul hazardous materials, supply all Alliance offices with their current rate guide and provide proof of delivery on all shipments. Alliance also asked for more knowledgeable drivers who didn't mind being measured against the customer's rigorous standards. That means supplying high-quality equipment, on-time pickup and delivery, timely return of empty equipment and accurate freight bills.

A compliance rate of 100 percent is the goal, 95 percent the minimum. Anything within that range draws a pat on the back – and a discussion of how the carrier can do better. Prior to dropping the bombshell, Alliance had contracted with 637 motor carriers for drayage. All but 46 agreed to the new standards. True to its word, Alliance severed relations with those draymen. "We respect their reasons," says Hirst, "but they made the decision not to enjoy our business."

The program is already yielding benefits. A handful of drayage companies are now measuring their own performance and reporting to Alliance without prompting. Hirst hopes all of its carriers will eventually do the same.

Alliance expects to further reduce its contract carriers, although it's not bent on weeding anyone out immediately. "This is an evolutionary process," Hirst says. "We want to allow the best to come to the surface."

Hirst says Alliance is talking about developing its own quality awards, to provide extra incentive to employees and vendors alike. Still, he adds, "the purpose of the quality process is not to put a bunch of plaques on your wall. Expansion of business is the recognition you're looking for."

– Robert Bowman

Sea-Land Service

Sea-Land demands that its quality process show bottom line results. Knowing the cost of poor quality is the first step.

From Deming to Juran to Crosby, all the quality gurus stress the importance of understanding the true cost of quality. But in many businesses, the handle on costs is lost amid the rah-rah team meetings and slogans.

Sea-Land Service Inc.'s President and Chief Executive Officer, John Clancey, isn't about to let that happen at America's largest containership line. A former Marine, Clancey is leading a campaign to cut through all the vague quality posturing and ensure that the company's formal quality process, implemented in 1989, provides direct bottom-line results for both customers and the company. "Calls for quality and focus are easy," Clancey says. "Like most things in life, the devil is in the details."

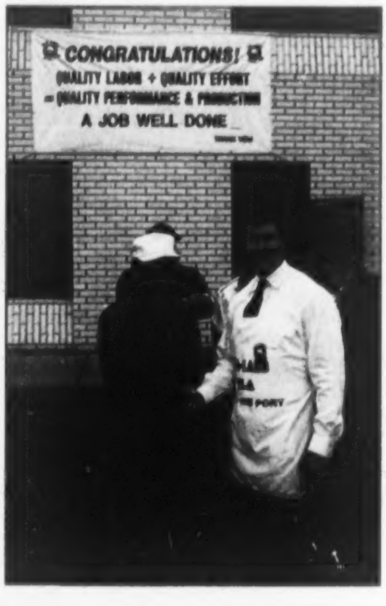
Clancey's mandate is to progress with the corporate streamlining that occurred at Sea-Land under the tenure of previous President Alex Mandl, who reigned in levels of mid-management, made dramatic personnel cuts, kept operations running efficiently and returned the company to profitability. The company's quality process is aimed at solidifying the new, leaner operating structure through improving the decision-making process for employees.

"John is taking the company from being activity-centered to being results-driven," says Vice President of Quality Gary Ritzman. Quality for its own sake isn't enough, he explains. What is the financial impact of doing something new? Or choosing not to do it? These are the questions Clancey and company are trying to get employees to ask themselves.

The first step in driving quality to the bottom line was surveying 1,500 Sea-Land customers around the world to determine what was important to them. From this, Sea-Land learned its customers priorities: on-time vessel arrival; transit time; equipment availability; customer service and documentation—in that order. That might all seem obvious to a shipper, but to a massive global liner operator, it can mean huge changes.

"We used to look at ourselves geographically," explains Ritzman, who used to work in Sea-Land's Taiwan region. "We were judged on filling a ship in a particular region. Everything was vertical—how was one region doing compared to another. We can't do that anymore. Now we view the entire operation system-wide, and we're rewarding people based on shipments moving from one end to the other."

When Sea-Land executives performed a cost of quality analysis considering operational snafus such as restows, bypasses, overtime, added lift, standbys, waiting time—all the extra costs incurred when a ship doesn't adhere strictly to a set schedule—it was an awakening. It cost the company $23 million in the North Atlantic to not run ships on-time. In the Pacific, the figure was a staggering $69 million. "We had previously assumed that we couldn't afford to make the ships run on-time," says Ritzman. "But this analysis showed that we couldn't afford to not have the ships run on-time."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QUALITY LABOR + QUALITY EFFORT
= QUALITY PERFORMANCE & PRODUCTION
A JOB WELL DONE

Sea-Land's General Manager in Port Elizabeth, Bill Hamlin, greets an ILA member at a ceremony held recently to mark improved working relations between the carrier and the union.

As a result, salespeople had to be reeducated. They cannot promise customers that a ship will wait for their all-important cargo. "Our surveys proved that reliability is more important to our customers than flexibility," says Ritzman.

Sea-Land defines three cost categories: prevention costs (money spent preventing mistakes); appraisal costs (money spent uncovering where mistakes are made), and failure costs (money spent fixing a mistake). Failure costs are further broken down into Internal (errors discovered prior to customer delivery) and External (errors discovered by the customer). The total cost of quality is the sum of these costs. Comparing this sum to what delivery of a product or service would have cost if no mistakes were made reveals how much money is often wasted by not doing a job right the first time.

Ritzman's job is to make sure employees on every level understand the cost of quality. For example, by encouraging a more thoughtful use of courier services, Sea-Land has reduced its courier bill by 38 percent, a $21,000 savings. But Ritzman stresses there is no formal system for calculating and monitoring the cost of quality. "We do not want it to become a contest for people to invent savings," he says. "This is not a cost-cutting weapon; it is a tool for greater efficiency."

—E.J. Muller

continued

Mark VII Transportation

Customers are demanding formal quality processes, so this company lets employees work with customers to set the standards.

You don't understand what all the fuss is about. Quality this, Quality that, corrective action teams, performance indexes. Why go to all that trouble? There's a simple way to measure whether you're running your business right—you've got more satisfied customers than you did last year at this time. Isn't that enough Quality for you?

That's pretty much how the top management at Memphis-based Mark VII Transportation Co. looked at things. A three year-old sister company of Missouri-Nebraska Express, Mark VII has enjoyed rapid growth during its fledgling years. As a new company, it did a lot of things right from the start, and didn't see the need for the kind of formal quality process that's often used to clear the stale corporate air in older companies seeking a Quality infusion.

But as of April, Mark VII's 75 offices, as well as all companies in the MNX corporate family, have been engaged in a corporate-wide Quality Initiative Program. "The accounts you already do business with understand that you have a quality product," says Mark VII's Executive Vice President David Wedaman. "But we saw that more and more potential customers were asking about our 'formal' quality process. It became apparent that we'd have to formalize the process as a way of attracting new customers."

One obstacle was that many of Mark VII's new hires came from companies where Quality processes were synonymous with Big Brother. "We're a very decentralized company," he notes, "and we didn't want employees saying 'Here comes Corporate to tell us how to run our operation.' We wanted a participatory system, not a watchdog system."

That's why the campaign was turned over to Director of Operations, Sandy Painter. Her knowledge of all facets of the operation, and her reputation for flexibility, were essential to turn a potential negative into a positive. "Sandy was the perfect person to take the corporate Quality campaign into autonomous field locations and say, 'We want to learn from you,' " Wedaman says.

"We didn't want to lose our focus on the customer," says Painter, "and we didn't want to implement a formal system that would remove any of the flexibility that our people have in serving the customer." In field offices, all the quality performance standards are set by customers. "Everyone's requirements will be different," Painter notes. "One customer may want to work with a PC, another may want to work with a typewriter. Our job is to provide whatever service they want, not to make them adhere to our quality system."

She says the process is being phased in slowly. "People want to be part of the process, not feel like something is being forced upon them." That's why Mark VII encourages field people, rather than corporate types, to set standards. It puts decision-making responsibility closer to the customer. "You cannot monitor Quality from the corporate office," Painter declares. "You have to be out there in the field, where the work is done."

As an example of employee-driven quality concepts, Painter recalls when a large account in Memphis wanted Mark VII to assume the responsibility for coordinating all of its truck brokerage. A worker who had set up such a system in the company's Evansville office was brought in to swiftly install a similar one. It's a great example of Corporate encouraging field locations to seek optimum solutions, and then efficiently deploying those solutions elsewhere in the company.

Having a formal Quality process is almost a requisite today, Wedaman admits. But he isn't much for the numbers side of the Quality movement. "A lot of it is measuring for the sake of measuring. We can provide all that for our customers, but that's not what we lead with," he says.

There are, of course, internal operations that are now governed by classic statistical process control measurements, such as billing. That's an area where strict procedures are implemented, monitored and maintained. But for many aspects of the operation, Wedaman is more interested in fostering the quality process than establishing procedural guidelines. "I believe in people over the procedure. The key is giving them the tools and training to do the job right."

—E.J. Muller

Performance standards are set by customers. "Our job is to provide the service they want," says Mark VII's Sandy Painter, "not to make them adhere to our quality system."

Spartan Express

Hire quality people, train them thoroughly and help them to see the big picture. That's Spartan's simple recipe for quality.

Spartan Express, Inc., based in Greer, S.C., believes that Quality is achieved by encouraging employees to use their wits. Or in this case, their WITS—as in Whatever It Takes, the name Spartan has given to its quality process. Spartan President Barry McNaughton admits he doesn't go for all the slogans and cheerleading associated with Quality. But back in 1989, he recognized that "a formal quality campaign was needed to provide an instrument for improvement."

Spartan's process contains all the usual performance measurements, but McNaughton points out that the key to success is creating a corporate culture in which all employees are willing to do Whatever It Takes to satisfy a customer. To wit:

Account Manager Robbie Dudley discovered a misloaded shipment bound for a new customer. Rather than let the relationship get off on the wrong foot, he pulled the freight and used his own truck to deliver it to the correct consignee.

A driver, Rick Prather, showed up early for his load in Spartan's Knoxville terminal. Rather than wait idly while his LTL shipment was being built, he delivered a customer load across town, pleasantly surprising the consignee and freeing up needed equipment for Spartan.

When Designer Ensembles in Honea Path, S.C., needed an emergency shipment delivered, Spartan driver Mark Mitchum so impressed the company's shipping supervisor that the company inked a contract with Spartan, stipulating Mitchum as its designated driver.

These are the kind of things that don't always show up on a Quality performance measurement report. But according to Spartan's Director of Quality, Val Pierce, they are the essential goal of a good quality mindset. "Spartan has always had a lot of internal measurements," she says. "We've measured anything and everything. But sometimes you can get bogged down in all the numbers. The purpose of a quality process should be to get employees performing at their best."

Pierce is a true believer in Quality; she has a galvanizing fervor about her work. But unlike a lot of the quality "champions," who preach strict conformance to the numbers, Pierce believes less in procedural discipline and more in employee empowerment. "In the past, we had been like many corporations in America, dictating from the top down. Always quick to criticize and slow to praise." Now Spartan's culture is to "humanize" the Quality discipline by diligently recognizing and rewarding outstanding work. "We don't want managers who keep score," Pierce explains. "We want managers who can excite people to do a good job."

Once people have been trained to do a job right, and encouraged to do it right every day, they must be recognized for their efforts. Spartan has several methods for fostering recognition and rewards.

Anyone within the company can single out another employee for recognition when they perform above and beyond the call. That was the case with Rick Prather in the case mentioned earlier. Each special case earns a handwritten letter of recognition from senior staff. If an employee earns five special mentions—from internal or external customers, they become an "Extra Miler," which entitles them to special rewards. In addition, there's another incentive program called SPIN, for Spartan Incentives, in which workers can earn bonuses for meeting specific customer requirements. According to Pierce, the recognition program "has been more successful than anything else we've implemented."

And before you start thinking that this pat-on-the-back, happy-face approach to Quality will crumble under the steely no-nonsense measurements of a statistics-based performance measurement system, consider this: Spartan was one of only 13 vendors deemed a "Distinguished Supplier" by the Baldrige Award-winning Milliken & Company. Spartan averaged a 98 percent on-time record over the course of a year for Milliken, and had no claims.

Spartan tries to keep its operation tightly-focused. "We are not a global company," says McNaughton, "but our customers are. Our salvation is to continually improve our quality, and eliminate waste." For Spartan, that means encouraging workers to keep their WITS about them.

—E.J. Muller

Spartan
Spartan

Of 300 recent job applicants, only five or so passed muster, says Barry McNaughton. The carrier provides good equipment and incentives. In exchange, it expects a quality attitude.

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Thomas A Foster, Esq

MORE THAN A NEW LOOK FOR DISTRIBUTION

DISTRIBUTION is listening, and you have told us what to address in our pages. This list includes career management, benchmarking, third-party services, technology and global logistics—just to name a few.

Continuous improvement is the cornerstone of the quality process, and we at DISTRIBUTION Magazine have taken this concept to heart. In fact, this issue marks a new milestone in our 91-year history of serving the shipper's information needs. We have redesigned our magazine to make it easier to read and more interesting graphically. But the redesign is only one aspect of a new DISTRIBUTION that will unfold in the months to come.

We have interviewed scores of readers like you during the past year to identify the critical issues you want us to address in DISTRIBUTION. Here is a small sample of the issues you have raised, along with a preview of several articles that we believe will help you perform better for your company and advance your logistics career.

What can I do to better manage my career?

We have a major feature in this issue that points out that logistics managers can expect to handle multiple job responsibilities. In the months to come, we will also look at the value of professional certification and advanced education, marketing yourself within your organization and alternative career paths in the logistics industry.

How can we rapidly improve our logistics performance?

The most promising technique to improve performance is benchmarking, which consists of finding the best industry practices for a particular function and then applying them to your own operation. We have several articles in this issue highlighting best practices for transportation and warehousing operations. With the help of our readers and industry experts, we are identifying those companies with some of the best industry practices for a variety of logistics operations. We will profile these companies to help your benchmarking efforts.

What is the future of logistics outsourcing?

Third-party services are revolutionizing how companies handle their logistics. All levels of logistics management must learn how to adapt. We will report how and why shippers are outsourcing logistics functions, explain to logistics managers how to survive this trend, and keep you up to date on who the leading third party logistics vendors are.

Among the other issues we will address in the months to come are: How to use information technologies to cut costs and improve performance; how to use logistics to improve global competitiveness; how to cope with increased federal and state regulation; and many more.

To make sure we are succeeding in our quality process, we need your continuing input. DISTRIBUTION is devoted to meeting or exceeding your information needs. Let us know how we are doing.

DISTRIBUTION

EDITORIAL STAFF
Thomas A. Foster
Editorial Director

E.J. Muller
Senior Editor
(West Coast)
510-769-0884

Sharon Struckus
Senior Associate Editor

Jake Smith
Creative Director

Sally Mauer
Art Director

Emily Hall
Production Manager

CONTRIBUTING EDITORS
Joseph V. Barks
John Betz
Robert J. Bowman
Dr. Joseph Cavinato
Stanley Hoffman
Richard Malkin
Daniel J. McConville
Robert Selwitz

WHO TO CONTACT
General comments, complaints and article ideas
Thomas A. Foster, 215-964-4379

Subscription information
Rick Thornton, 215-964-4140

Media kits, editorial calendars, back issues and copies of articles
Melanie McLaughlin, 215-964-4386

Reprint quotations
Carol Doherty, 215-964-4267

Marketing and general advertising information
DiAnn Vick, 215-964-4383

Classified and warehouse advertising, direct mail
Carolyn Bidwell, 215-964-4380

Advertising mechanical and film information
Emily Hall, 215-964-4384

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MORE WORK,

you will be required to handle more projects
limited staff, but all of us are in the same situation.

Your request for additional staff to replace any of the 10 people laid off last year is denied.

Sincerely,
John Smith
John Smith
Executive Vice President

LESS PAY

It won't help pay this year's orthodontist or tuition bills, but take heart—stagnating salaries for logistics executives may signal the painful early stages of a progressive new management era that will eventually give the best of you a chance to grow.

It was just another run-of-the-mill personnel announcement. "Rod Brewer has been promoted to Vice President of Operations at Suregood Corporation, one of the nation's leading manufacturers of premium-quality prepared foods," it began.

"Prior to his promotion, Brewer served as Vice President of Manufacturing, overseeing Suregood's four plants in Michigan, Georgia, Texas and Utah," the announcement continued. "In his new position, Brewer will add to his responsibilities the areas of Engineering, Production Planning/Industrial Engineering, Value Analysis, Purchasing, Quality Assurance, Facilities and Capital Planning...and Distribution."

"Rod Brewer" and "Suregood" are fictitious names in the above example. But the remaining facts—including titles and all of the other entries—are exactly as they appeared in the actual announcement. As such, they provide an all-too-real representation of a pervasive management trend.

Survivors in today's hacked-up corporate jungle aren't just being asked to wear two hats—they're now balancing a whole shelf of fedoras. "Promotions" don't automatically lift you to cushy levels of executive luxury anymore—more likely, they just dump entire new loads of accountability into your lap. And distribution is no longer a specialty car that always merits distinct attention—all too often, it gets hooked instead onto a virtually endless string of boxcar responsibilities that really share only a single trait: Someone in the organization's got to do them all.

The "good news" is that situations such as the one reflected by the announcement about "Rod Brewer" and all that he now has to do may actually be evidence that the first stage of sweeping, positive change in U.S. organizational management is taking hold. Eventually, this change may lead to implementation of innovative, and far more effective, management approaches built around progressive concepts such as process orientations, horizontal structures, and integrated, team-based work design. From the individual's standpoint, the move to "tomorrow's organization" promises to offer new opportunities for financial rewards, job fulfillment, and career growth based on improved development and recognition of singular skills and contributions.

But to get to those highly desir-

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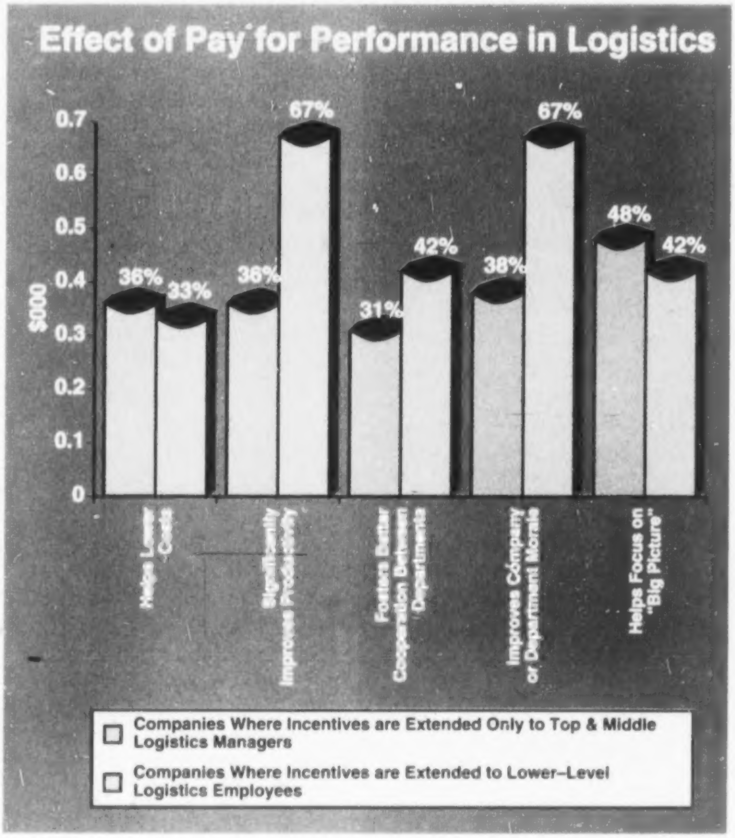

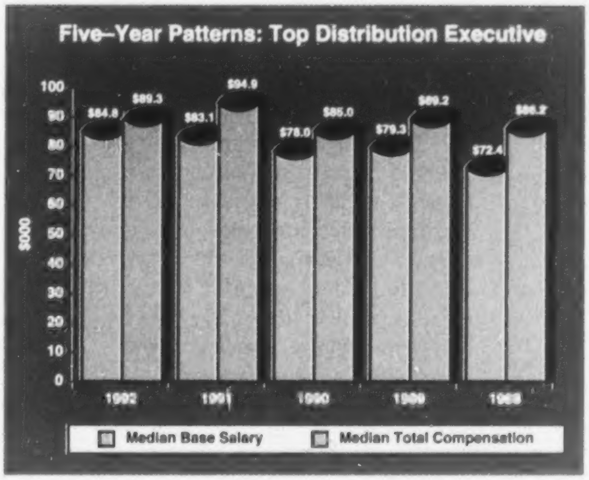

able stages, companies have to start with some major fat slashing. The onslaught of a major recession has only added to the urgency to get lean before getting keen—and, of course, has created "pile it on" scenarios at companies that are too focused on short-term survival to have any notion of eventually building more effective organizations.

Whatever the motivation, the implications for logistics and its related functions are clear: when those responsibilities are not being farmed out altogether, they're being lumped under broader umbrellas within the organization and put under the charge of managers whose overall duties are far more general and sweeping in nature. Specialists who work for these managers are also being asked to fold several previously distinct responsibilities, such as materials handling supervision or purchasing contract administration, into more swollen packages of wide-ranging duties.

And what do the loyal logistics troopers "get" in return for taking on these added burdens? As the obnoxious line goes that everyone's heard from a sneering supervisor, they "get" to keep a job. Certainly, the flattened salary and bonus picture reflected by the charts appearing throughout this logistics pay report fail to indicate any commensurate increase in compensation, even as the job descriptions for each level measured in the Mercer survey continue to expand.

And reports from the front lines confirm that "more work, less pay" really is the short-term tenor of the times in the logistics arena. "We keep hearing a lot about great pro-

continued

ABOUT THE MERCER COMPENSATION SURVEY

The 1992 Materials and Logistics Management Compensation Survey, from which this report is drawn, was conducted in the first quarter of 1992 by William M. Mercer, Inc., a leading compensation, benefits and human resources consulting firm. Survey data reflects salary levels as of January 1, 1992, and bonuses that were paid out for the most recently completed fiscal year at the time the survey was completed.

Participants in 1992 included 180 organizations reporting data on logistics job holders in 364 U.S. locations. These companies constitute a representative sample of various small, medium-sized and large companies, as measured by gross sales and dollar volumes purchased for each.

For example, 12 percent of the responding firms had gross sales of less than $10 million; 22 percent had sales of $10 million to $50 million; 13 percent had sales of $50 million to $100 million; 33 percent had sales of $100 million to $500 million; 11 percent had sales of $500 million to $1 billion; and 9 percent had sales of over $1 billion. Also, 27 percent of the respondents had purchase volumes of less than $10 million; 28 percent had volumes of $10 million to $50 million; 15 percent had volumes of $50 million to $100 million; 26 percent had volumes of $100 million to $1 billion; and 4 percent had purchase volumes of over $1 billion.

The full survey, now in its 12th year, breaks out compensation data by industry, annual sales, type of operation and geographic location. Information is also provided on salary administration practices and employee benefit programs offered by survey participants. Copies of the full survey report are available for $225 to participating organizations and $450 to non-participants. "Custom cuts" of the data (for selected industries, locations, etc.) are also available for $200.

For more survey information, write to William M. Mercer, Inc., National Survey Group, 1417 Lake Cook Rd., Deerfield, IL 60015, or call (800) 333-3070.

MORE WORK, LESS PAY

TRANSPORTATION MANAGER

Responsible for movement of material from all production facilities in a corporation with over $100 million in sales. Supervises other traffic managers or specialists. Typically reports to the top distribution executive at the corporate level.

	Salary	Total (including bonus)
10th Percentile	$40.9	$41.2
50th Percentile	58.8	59.1
90th Percentile	94.7	105.3

UNIT TRANSPORTATION MANAGER

Responsible for movement of material from production facility, including shipments to domestic and international customers and to plants within the company. May supervise other traffic managers. Typically reports to the distribution manager.

	Salary	Total (including bonus)
10th Percentile	$34.3	$35.7
50th Percentile	43.2	44.4
90th Percentile	56.7	57.6

OUTBOUND TRANSPORTATION MANAGER

Responsible for shipping of final or in-process products as well as timely reporting of completed shipments. Handles tracking and claims, routing and carrier selection. Typically reports to the distribution manager.

	Salary	Total (including bonus)
10th Percentile	$20.5	$21.0
50th Percentile	25.5	26.4
90th Percentile	39.1	40.4

grams that are coming down the pipeline, and great new approaches to structuring the organization that will let us all work better together and make our lives here more stimulating," says a veteran transportation manager at one major industrial firm. "And it's true, there are some interesting new concepts that are percolating.

"In the meantime, though," he adds, "we're all scrambling down here in the trenches to pick up the pieces left by people who are no longer here." (This particular firm has seen over 10,000 total layoffs since the start of 1991; the transportation manager says that his department has been "decimated.")

"And, no, I can't say I've seen a lot of extra numbers in either my regular paycheck or my bonus check to 'compensate' me for all the extra things I've taken on," the transportation manager laughs. "But I'm really not in any position to squawk about it. For now, the operative philosophy here is clearly 'Keep your head low.' "

Out of the box?

There may be a silver lining, though, for logistics pros who now find themselves buried in a stack of printouts and post-it notes during their extended workdays.

Logistics has long been populated with professionals who have expressed an eagerness for the opportunity to demonstrate a broader range of skills and break out of what they feel is an unfairly restrictive "specialist" mold. Those who can survive the short-term Sturm und Drang may indeed be given just that chance—if their employers prove serious about reshaping their streamlined ranks into more effective organizations after the shelling has ceased, and if

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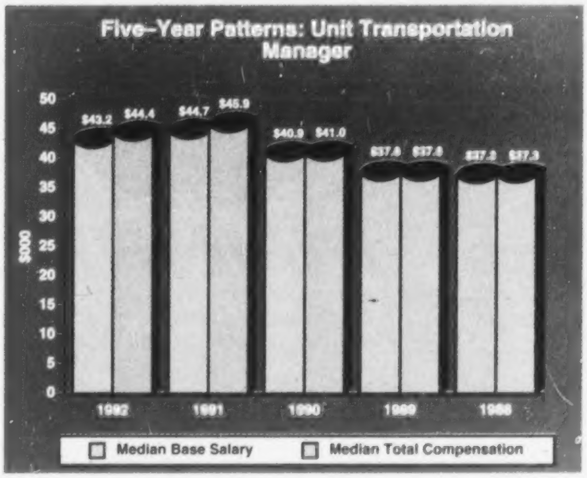

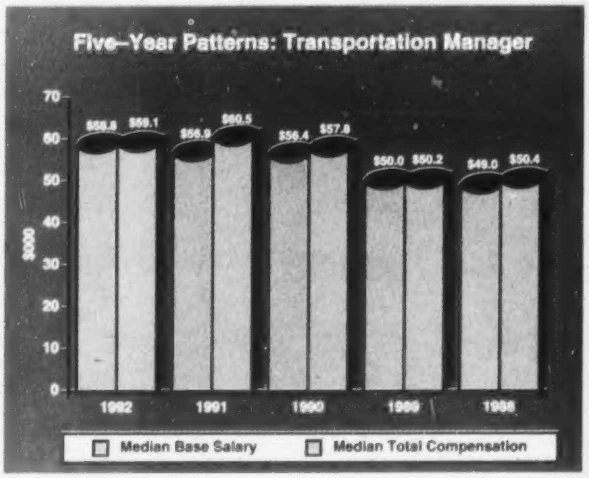

MORE WORK, LESS PAY

TOP MATERIALS MANAGEMENT EXECUTIVE

Responsible for all materials management functions, including production planning, distribution and purchasing. Reports to corporate manufacturing, operations or other top level officer. Supervises over 100 employees through subordinates.

	Salary	Total (including bonus)
10th Percentile	$69.1	$69.9
50th Percentile	93.5	104.0
90th Percentile	158.5	207.7

TOP DISTRIBUTION EXECUTIVE

Top distribution position in a corporation with over $100 million in sales. Responsible for shipping/receiving, traffic, field warehousing, and customer order processing. Reports to the top materials management executive at the corporate level.

	Salary	Total (including bonus)
10th Percentile	$56.8	$57.5
50th Percentile	84.8	89.3
90th Percentile	141.8	175.6

new pay concepts that focus on skill development, "competencies" and the replacement of traditional salary grades with less-rigid "bands" (see box, p. 38) take hold.

Bruce Spiegal, a principal in the Philadelphia office of William M. Mercer, Inc., feels skill-based pay may be right up frustrated logisticians' alleys. "Where the traditional, job content-based pay tended to try to cram people into pre-determined boxes," Spiegal notes, "the new plans are being shaped around people and their individual skills and development. This gives people a chance to grow more into different jobs. It also does away with highly detailed job descriptions and their subtle differences"—descriptions that often form the basis of pay scales and serve to shut out logistics managers who can't easily acquire the added accountability or know-how needed to move into higher pay ranges.

In a skill-based environment, Spiegal notes, organizations can be far more flexible in both who and how they can reward. "It allows an organization to reexamine its reward system, and return back to placing a value on people," he notes. "It gets away from artificial elements—tenure, hierarchies, titles—that tend to prevent an organization from determining what individuals and teams really do contribute to the company's overall performance. It moves away from a focus on functions and towards a focus on the processes that lead to rewards for the entire organization."

But Spiegal cautions that the skill-based movement will only be a boon to those logistics pros who are prepared to show their real mettle once given the opportunity. Spiegal notes. "Organizations may be letting people out of boxes, but they're also asking you, once you're out of that box, to do more for your pay than in the past. If you're not willing to wear several hats and spread yourself out so you can provide the value that organizations are now looking for, you'll be worth just the same amount, or less."

Added value on productivity

Results from this year's survey question about the type of pay-for-performance measures now being used (see p. 29) to provide some clues about the logistics-related values that organizations now hold dearest. The values placed on fairly narrow measures such as adherence to transportation budgets or inventory levels have actually decreased from readings taken in 1991 (transportation budget adherence slipped from a 55 percent affirmative reading to 53 percent, and inventory levels from 61 percent to 58 percent). Other measures such as adherence to stated customer service requirements (up from 64 percent affirmative to 69 percent) and work force productivity (up from 69 percent to 76 percent) have seen their stock rise significantly, however. In addition, a new measure that was gauged for the first time in the 1992 survey—adherence to quality process objec-

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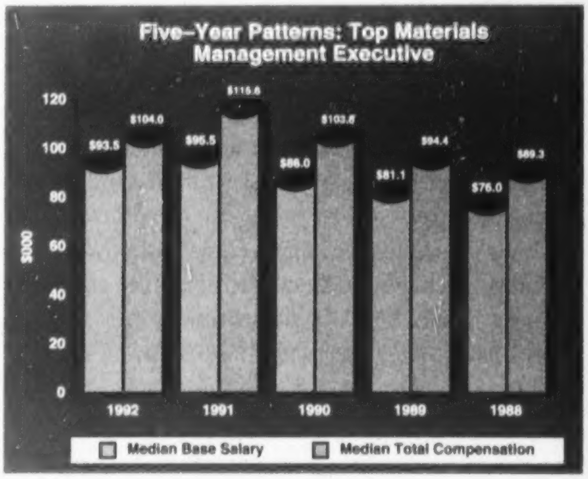

TOP PURCHASING EXECUTIVE

Purchasing position in a corporation with over $100 million in sales. Responsible for purchase of raw materials, component parts, equipment, services and supplies. Reports to the top materials management executive at the corporate level.

	Salary	Total (including bonus)
10th Percentile	$55.9	$56.4
50th Percentile	81.5	86.5
90th Percentile	113.7	141.1

PURCHASING MANAGER

Top purchasing position at the unit level. Responsible for purchasing of raw materials, component parts, equipment, services, and supplies. Reports to the materials management executive.

	Salary	Total (including bonus)
10th Percentile	$41.3	$42.5
50th Percentile	56.9	59.2
90th Percentile	73.3	75.0

tives—is being used in the pay-for-performance plans of 73 percent of the logistics departments that were surveyed.

As the large weight being assigned to work force productivity attests, new pay movements put important new spotlights on logistics professionals in terms of their own management abilities, in addition to what they will be expected to show in the way of their own value-added contributions. "When there was more structure, you really didn't have to manage," notes Spiegal. "Now, management skills—be it for production-oriented distribution centers or team-based logistics projects—are at a premium."

An adjunct to this year's survey revealed another key to effectively managing the logistics process in the new, restructured environment. When incentives are not extended to all who are involved in the process, productivity improvement is significantly lower than when all team members have a chance to share the payoff. Morale also receives a big boost when incentives are pervasive, and cooperation between logistics and other key processes within an organization improves.

Looking specifically at the data from the last Mercer survey, 1992 figures for both base salaries and total compensation show a general trend of flatness for the seven key logistics-related positions (see type charts).

Remembering that year-to-year comparisons must be approached carefully because of shifts in the survey base, pertinent trends can still be identified. Median base salaries declined in three of the seven positions charted.

Even more telling were the precipitous declines shown in total case compensation for many positions. In only one case, in fact—again, the materials management manager position—was an increase in median total compensation posted from 1991 to 1992. Far more prevelant were declines such as the 10 percent drop in median total compensation shown for the top materials management executive, and the nearly 6 percent drop shown for the top purchasing executive. Clearly, there weren't many hefty bonus checks being cashed in

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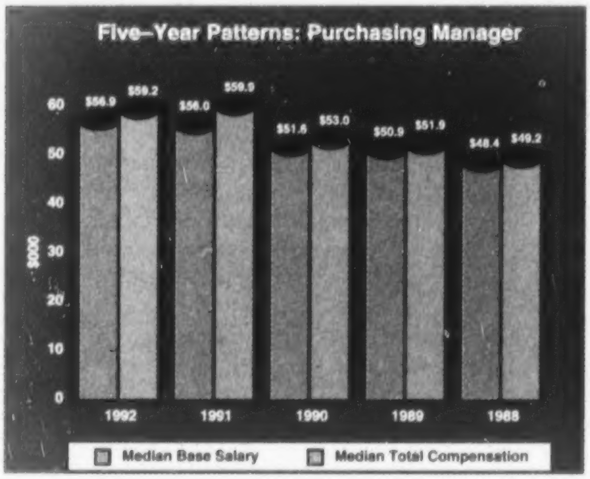
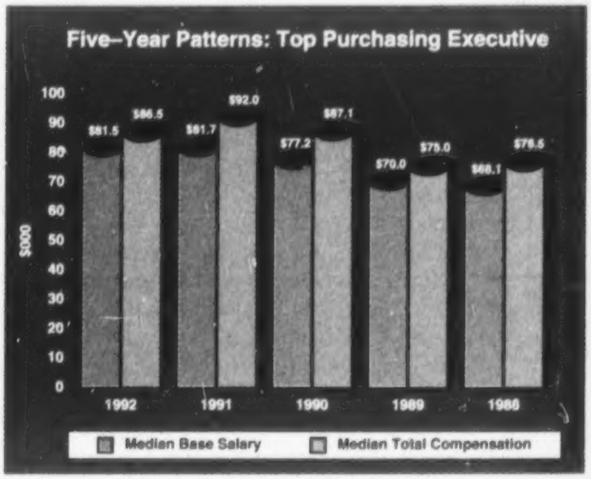




the logistics department at the end of the last year.

Even with the ground that was lost last year, from a five-year perspective logistics professionals can be seen to be making progress, but it hasn't exactly been of the fast-track variety. Comparing Mercer survey numbers from 1988 to those of 1992, the top distribution executive, for example, has posted a 17.4 percent increase in base salary, but only a 3.6 percent boost in total compensation.

Other five-year performance "improvements" are as follows: top materials mangement executive, up 23.0 percent in base salary, and up 16.46 percent in total compensation; top purchasing executive, up 19.67 percent and 13.07 percent; transportation manager, up 20 percent and 17.26 percent; unit transportation manager, up 15.81 percent and 19.03 percent; purchasing manager, up 17.56 percent and 20.32 percent.

ARE YOU READY TO PLAY IN THE BAND?

The latest rage to hit the world of organizational design and pay planning is "banding." It's already been introduced in a big way in organizations such as General Electric and Northern Telecom, and many other companies are hurrying to "join the band."

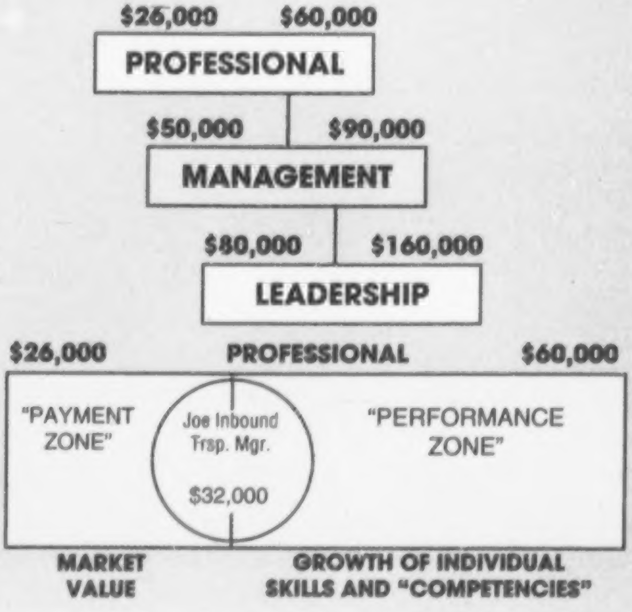
Used properly, banding could enhance the opportunities for logistics professionals to increase their reach and recognition within an organization and achieve pay levels that are more in line with their individual contributions. Used improperly, banding promises to become another way for top management to "justify," why logistics pay cannot improve to any great degree.

In its ideal form, banding is an attempt to focus more in individual growth, and to pay more for the person than for the position. It establishes broad salary ranges for a series of job groupings, and then plots pay for specific people within those ranges, by drawing on both market conditions and individual assessments of a person's performance and growth in the job.

The good news about banding, is that it would do away with a lot of the mysterious control elements that have been tied to salary planning in the past ("midpoints," "compa-ratios," etc.) and make it easier for shining stars to break out of any boxes or administrative traps that have kept them artificially suppressed. The bad news is that the proposed replacements for these control elements—trying to measure desired individual "competencies," for example—have the potential to be just as frustrating or damaging if they are not kept simple and objective.

To date, some companies have taken a very simplistic approach to banding, and are basically using the concept to put a new look on existing salary grades. Others have taken far more radical approaches—General Electric, for example, found a way to put all of the people in its huge organization into just five bands.

Ultimately, banding promises to work best in company cultures that support a more person-centered approach to pay and view "jobs" as merely the stages or platforms upon which individuals perform.



HOW TO
BENCHMARK WAREHOUSE OPERATIONS

Benchmarking is *the* hot subject for warehouse managers eager to improve their performance. A study by Georgia Tech is a major step for U.S. companies trying to understand their operations.

Ask yourself a few simple questions about your warehouse operations. Do you know how fast your workers can pick? How long does it take to complete an average order? How about the time and costs of restocking?

If you are like most warehouse managers, you have little hard data on any of your warehouse operations. Even if you did, you really wouldn't know if this performance is good or bad, since warehousing performance benchmarks have been few and far between, at least until recently.

Dr. Ed Frazelle, director of the Logistics Institute at the Georgia Institute of Technology, recently conducted a performance survey of more than 100 warehouses operated by 30 companies in 20 different industries.

The survey looked at performance measurements for a number of warehouse activities (see tables). Frazelle's team then devised a system that divided warehouse performance into five groups with the following ratings:

Rating No.	**Performance Category**
1	Needs Improvement
2	Sub-Par
3	Par
4	Superior
5	World Class

The verbal descriptions and the performance ratings are subjectively based on the judgment of Frazelle and his team of researchers.

Warehouses measured in the Georgia Tech study ranged in size from 40,000 square feet to over a million square feet. Exactly half of the facilities fell into the category of 100 to 250,000 square feet. Only 10 percent of the warehouses were in the million-square-feet-plus range.

However, Dr. Steve Hackman of Georgia Tech explained while presenting the survey results at a Warehouse Education and Research Council

continued

Facility Size

Facility Size (000s FT2)	Rating	% Operations in Rating
1,000 +	5	10
500-1,000	4	15
250-500	3	15
100-250	2	50
<100	1	5

Largest: 2,000,000 Sq. Ft.
Smallest: 40,000 Sg. Ft.

SKU Activity

Annual Lines Shipped per SKU	Rating	% Operations in Rating
400 +	Hyper-Active	15
250-400	Fast	15
100-250	Active	35
50-100	Slow	20
<50	Barely Alive	15

Highest: 887
Lowest: 8

Level of Automation

$ per Square Foot	Rating	% Operations in Rating
<$5	5	35
$5-$10	4	35
$10-$15	3	10
$15-$20	2	10
$20+	1	10

Highest: $25/sq. ft.
Lowest: $1/sq. ft.

seminar, being bigger is not always better. "It is harder to make large facilities efficient because communication becomes more difficult, travel distances can be excessive, and supervision becomes difficult," says Hackman.

Annual lines shipped for each SKU at the warehouses in the survey ranged from a low of eight (which Frazelle classified as "barely moving") to nearly 900. A facility that shipped more than 400 lines per SKU was considered "hyperactive."

Hackman cautions that this measurement alone is not a terrific indicator of efficiency because a line equals one line on an order. There is no distinction between a line with 30 cases and a line with one case.

"Efficiency is a total measure of how well you use warehouse resources including space, people and equipment to achieve a particular throughput," says Hackman.

The level of automation in the warehouses survey was measured by investment in material handling equipment divided by the number of square feet in the facility. The range was enormous—from a low of less than $1 per square foot to a high of $25 per square foot. Only 20 percent of the warehouses were judged to be in need of improvement and sub-par. Fully 70 percent were rated superior or world class.

One of the most important benchmarks in the study was number of lines picked per person hour, which is a key productivity measurement for pick-and-pack or broken-case operations. This measurement was calculated by taking the total lines shipped each year and dividing this figure by the total annual hours for all personnel involved in the picking operation to include operators, supervisors, managers and maintenance personnel. The benchmarks ranged from 1.6 to 60 lines per person hour with 65 percent of the warehouses reporting sub-par or needs-improvement ratings. Only 5 percent of the warehouses were judged to be world-class.

The corresponding benchmark for pallet-load operations is number of cases picked per person hour. This measurement is calculated by taking

continued

Lines per Person-Hour

Lines Shipped per Hour	Rating	% Operations in Rating
50+	5	5
20-50	4	5
10-20	3	25
5-10	2	50
<5	1	15

Highest: 60 LPH
Lowest: 1.6 LPH

Cases per Person-Hour

Cases Picked per Hour	Rating	% Operations in Rating
250 +	5	10
100-250	4	30
50-100	3	15
25-50	2	20
8-25	1	25

Highest: 353 CPH
Lowest: 8.4 CPH

Picking Accuracy

% Inaccurate Lines	Rating	% Operations in Rating
<.01	5	5
0.01-0.1	4	25
0.1-0.5	3	25
0.5-1.0	2	25
1.0-5.0	1	15

Best: 0%
Worst: 11%

the total number of cases shipped and dividing it by the total labor hours tallied by the order pickers. Again, the range was extremely broad—from a low of 8.4 to over 350 cases per person-hour. Only 45 percent of the warehouses were rated as sub-par or in need of improvement, and 40 percent were judged to be superior or world-class.

Picking accuracy is another crucial measure of warehouse operations. The average number of picking errors reported was just 1 percent. The worst performance was an 11 percent error rate. The best performance was a zero percent error rate.

Inventory accuracy, which is measured by the percent of items found in error, is important in that it tracks most of the time wasted by order pickers. Surprisingly, many of the warehouses in the survey did not know their error rate. The worst performance was 20 percent. The best was zero percent error.

The survey also looked at how fast new inventory is stored in the warehouse. The range for "dock-to-stock" time was from a slow 96 hours to only 30 minutes. Only 15 percent of the warehouses reported a world-class stocking time of less than two hours. One half reported stocking time of just under 24 hours, which were considered sub-par. Five percent reported that restocking took more than 24 hours.

Order cycle time was defined as the time it takes to complete an order from the moment picking begins. The worst order cycle time was 96 hours and the best was half an hour. The largest group (35 percent) reported that orders were handled the same day they were received, which was considered par. World-class warehouses, which were able to handle orders in less than one hour, accounted for 15 percent of the total. Thirty percent of the warehouses said it took one day or more to handle an order, which was considered sub-par or needs improvement.

Dr. Frazelle will be conducting a two-day benchmarking seminar on November 16-17, 1992 at Georgia Tech's Logistics Institute. For more information, call (404) 894-2343.

Inventory Accuracy

% Items in Error	Rating	% Operations in Rating
<.05	5	5
0.05-0.5	4	25
0.5-1.0	3	25
1.0-5.0	2	25
5.0 +	1	15

Best: 0%
Worst: 20%

Dock-to-Stock Time

Dock-to-Time (1)	Rating	% Operations in Rating
<2 hours	5	10
2-8 hours	4	15
Same Day	3	15
Next Day	2	50
Next Day +	1	5

Best: 0.5 hours
Worst: 96 hours

Internal Order Cycle Time

Order Cycle Time (1)	Rating	% Operations in Rating
<4 hours	5	15
4-12	4	20
Same Day	3	35
Next Day	2	20
Next Day +	1	10

Best: 0.5 hours
Worst: 96 hours

FREIGHT FORWARDER COUNCIL OF AMERICA SPEAKS UP

There are three fundamental misstatements in your recent article (June, 1992) Forwarders vs. Brokers that need to be addressed.

1. In regard to Mr. Tucker's statement on the shippers potential for being double billed on freight charges when using a broker as "...simply not correct." It is the statement of Mr. Tucker that is simply not correct. If a shipper pays a freight forwarder, he has paid the carrier, and he can not be pursued for freight charges. If a shipper pays a broker, the shipper must prove that the broker acted as the carrier's agent (which is not easy to do). Unless he can prove that the broker was the agent for the carrier, the shipper is liable to pay the freight charges. Mr. Tucker can cite no relevant case law to support his position, and when challenged to a debate on this issue, refused to respond. I attach the case law supporting our position for your information, and the benefit of your readers.

2. The shipper, Mr. Curly Lane, believed that he was protected from undercharge claims because of "...the contract he had inked with the broker." It is dangerous to foster a belief among shippers that any shipper-broker contract can protect them from 'balance due' bills. This is simply not the case. If the broker is dealing with a common carrier, he must pay the carrier's ICC filed tariff rate. If the broker is dealing with a contract carrier, he must have a valid contract. A forwarder, on the other hand, may contract with both common or contract carriers (Title 49 U.S.C. 10766) without restrictions. Therefore, it is not a contract that protects the shipper, it is with whom they are dealing.

3. In regard to the statement: "By strict legal definition, a forwarder is required to consolidate shipments. However, if the bulk of a forwarder's business is TL, the ICC in most cases considers it an illegal broker." Freight forwarding is defined in Title 49 U.S.C. 10102. The definitions are provided by Congress, not the ICC. When read, the statute clearly shows that these services must be performed or offered. There is absolutely no requirement that a majority, or certain percentage of LTL freight is necessary in order to qualify as a forwarder. Moreover, as you pointed out in your article, freight forwarding was deregulated by Congress in 1986; the ICC has no authority over deregulated freight forwarders.

In this article, the brokers have successfully managed to blow an enormous amount of smoke that may have clouded the very tangible benefits to shippers of using freight forwarders. However, anyone interested in comparing and contrasting the two, will be best served by reading the law, not listening to the self-serving posturing of Mr. Tucker, Mr. Lamboley, et al.

The Freight Forwarders Council would also request that the following statements of fact be mentioned:

1. The name of the organization is the Freight Forwarder Council of America, not the Freight Forwarders Association.

2. Mr. Michael Solomon is not the President of the FFCA, as represented.

3. Mr. Robert J. Gallagher is not the former "legal counsel" of the TBCA: Mr. Gallagher was the General Counsel of TBCA until he resigned to form the FFCA. Mr. Gallagher was the founder and organizer of the TBCA, and had served as General Counsel since its inception.

We feel it is critical that these inaccuracies be corrected. Thank you very much for your attention, and your prompt response to our concerns.

Paulie Engel
Executive Director
Freight Forwarders Council
of America
Northampton, MA

Editor: We apologize for misidentifying your organization, and any misidentification of your officers. Our reporter goofed. As for our supposed misstatements, we reported the positions of a prominent broker and other people who question the legality of certain activities and practices of freight forwarders. Your comments in this letter present your positions, and we are happy to present them to our readers. However, we would take issue with your sweeping statement that freight forwarders, because they are deregulated, are beyond the jurisdiction of the ICC. That is correct when these entities act as true freight forwarders. In the event their activity becomes that of an unlicensed property broker, the ICC has every right to step in, and they have done so on several occasions.

CORRECTION FOR ROADWAY EXPRESS

The 1990 and 1991 operating ratios we published for Roadway Express on page 12 of our July issue were incorrect. We regret the error.

The correct operating ratios are as follows:

1991 **O.R.**	**1990** **O.R.**
95.2	95.3

Roadway Express was the only national LTL carrier to show an improvement in operating ratio from 1990 to 1991.

C2150-1

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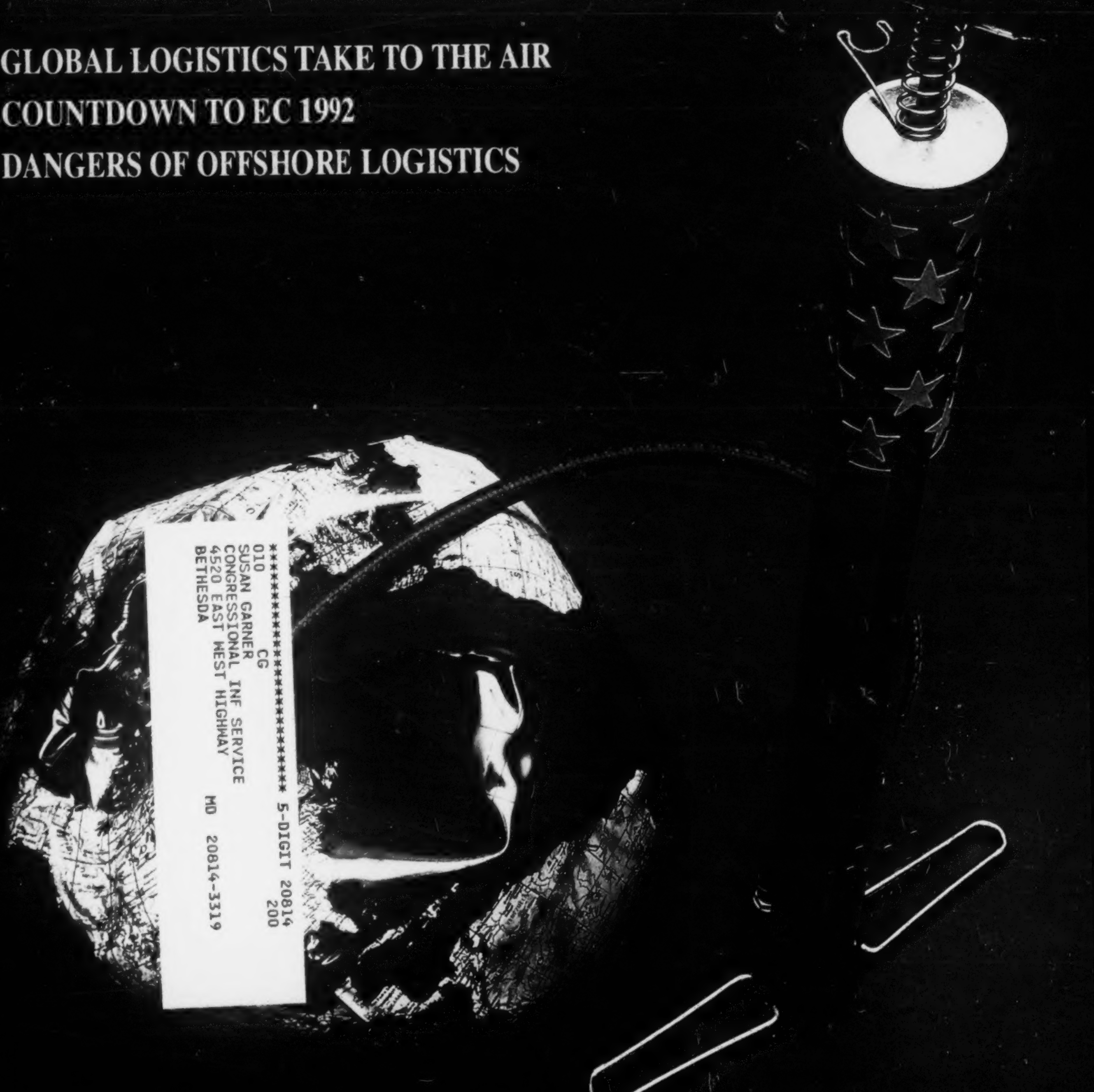
OCTOBER 1992

GLOBAL LOGISTICS TAKE TO THE AIR

COUNTDOWN TO EC 1992

DANGERS OF OFFSHORE LOGISTICS



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OCTOBER 1992 VOL. 91, NO. 10

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NEXT MONTH

TRANSPORTATION EXECUTIVE OF THE YEAR

Thomas A Foster, Esq

LET'S VOTE FOR THE LOGISTICS CANDIDATE

George Bush and Bill Clinton have opposite views on transportation and trade policy, so think long and hard about which candidate shares your vision of how logistics should be run in this country.

Ready or not, we are going to elect a president on November 3. Each of us has to sort through the campaign rhethoric, cheap shots and hollow promises to find a reason to vote for George Bush or Bill Clinton. Perhaps we should vote for the candidate that is most likely to help the logistics industry and all of us who make our living managing and moving the flow of commerce in this country.

Who is this logistics candidate?

President Bush's policies for the past three-and-a-half years have been consistently deregulatory and market-driven. At the Interstate Commerce Commission, his appointees have pushed for deregulatory policies that benefit shippers and market-wise carriers. Legislatively, he has failed to have any bills passed that would help shippers or our embattled merchant marine. Bush deserves some credit for passage of this year's highway bill, which will invest $151 billion in much-needed infrastructure improvements (although much of this money will go to public transit and pork-barrel projects).

The Administration's boldest initiative has been the negotiation of the North American Free Trade Agreement, which if ratified, promises to boost the economy and create new jobs through increased trade. Job prospects in transportation and logistics would especially benefit from NAFTA.

Bill Clinton's logistics policies are not as well defined, but according to one recent article, he says he would "make up for lost time" at the ICC by reversing the trend toward deregulation. Based on similar statements made by Clinton and his election team, we could expect strong regulatory policies at other agencies including the FMC, DOT and EPA, and we could forget about any legislative attempts to further deregulate trucking or loosen up the Shipping Act. Carriers, especially U.S. flag ocean and air carriers, could expect more federal support and protection from foreign competition. Clinton has also promised to invest around $200 billion in the infrastructure, apparently funded by even higher fuel taxes, user fees and possibly punitive "carbon taxes", which are favored by his vice-presidential candidate, Al Gore.

Clinton has been intentionally vague about NAFTA and other trade issues. We have to assume he would be guided by the Democratic leadership and his union backers, who strongly oppose NAFTA and support more protectionism. These policies could hurt logistics jobs.

Take your choice.

Next month, after the people ha~~ve spoken,~~ we will look more closely at what the logistics industry can expect from the next administration.

DISTRIBUTION

EDITORIAL STAFF
Thomas A. Foster
Editorial Director

E.J. Muller
Senior Editor
(West Coast)
510-769-0884

Cindy H. Muroff
Senior Editor

Sharon Struckus
Senior Associate Editor

Jake Smith
Creative Director

Sally Mauer
Art Director

Emily Hall
Production Manager

CONTRIBUTING EDITORS
Joseph V. Barks
John Betz
Robert J. Bowman
Dr. Joseph Cavinato
Stanley Hoffman
Richard Malkin
Daniel J. McConville
Robert Selwitz

WHO TO CONTACT
General comments, complaints and article ideas
Thomas A. Foster, 215-964-4379

Subscription information
Rick Thornton, 215-964-4140

Media kits, editorial calendars, back issues and copies of articles
Melanie McLaughlin, 215-964-4386

Reprint quotations
Carol Doherty, 215-964-4267

Marketing and general advertising information
DiAnn Vick, 215-964-4383

Classified and warehouse advertising, direct mail
Carolyn Bidwell, 215-964-4380

Advertising mechanical and film information
Emily Hall, 215-964-4384

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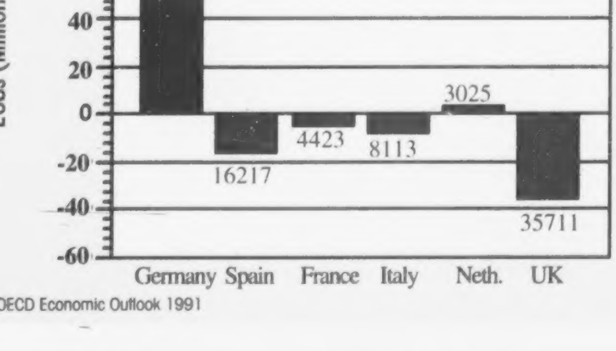
IS EUROPE READY FOR THE SINGLE MARKET?

Europeans—and U.S. firms doing business in Europe—have much to learn about handling the diverse logistics systems in the EC that are creating roadblocks on the path to a Single European Market.

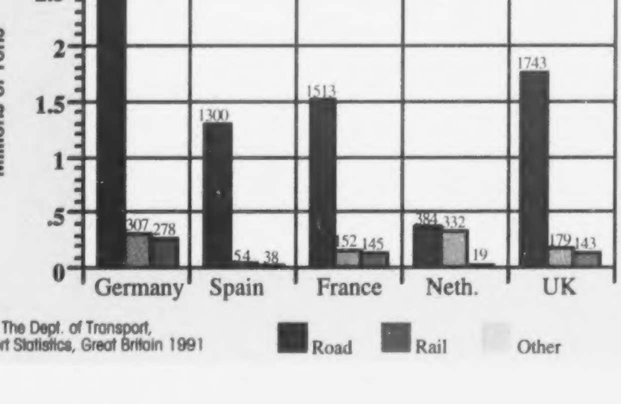
BY HANS VAN DER HOOP,
CONTRIBUTING EDITOR

BALANCE OF TRADE



Source: OECD Economic Outlook 1991

FREIGHT MOVED BY MODE 1989



Source: The Dept. of Transport, Transport Statistics, Great Britain 1991

The on-going European currency crisis and the near-defeat of the Maastrict Treaty by the French electorate show just how fragile the EC 1992 movement has become. Widely differing economic goals among the 12 European Community nations and a resurgence of nationalism threaten any smooth transition to a Single European Market.

The problems in the EC are not confined to politics and central bank policies. Differing logistics costs, practices and capabilities among the EC nations also are creating problems for companies attempting to set up Single Market manufacturing and distribution networks. The EC is still a long way from a highly integrated, seamless European logistics system.

These potentially disruptive differences in the performance of logistics systems throughout the EC were recently documented in a study prepared by the Institute of Logistics & Distribution Management, the accounting firm of Touche Ross, and the European Logistics Association. The report examines logistics practices in the major EC countries studying 800 companies in Germany, France, UK, Netherlands, Italy and Spain.

The study is the first one of its kind, and tries to identify how the logistics environment presently varies across Europe; what logistics' expenditure have in the major countries; and how logistics practice differs in these countries. These factors are directly dependent on population density, infrastructure, and economic viability.

continued

The researchers find an interesting correlation between the density of population and the average distribution cost as a percentage of sales: the higher densities allow for lower distribution cost (*See page 6*). For example, the population density in the Netherlands is more than 360 people per sq. km., while logistics costs are around 5 percent of the cost of sales. In France, however, population density is only around 100 people per sq. km. and logistics costs exceed 7 percent. But the correlation is not perfect. Spain has only 77 people per sq. km. and logistics costs are close to those in the Netherlands.

> ***Companies can enhance their logistics networks by adopting "best practices."***

A long-term problem for transportation and distribution in the EC is the varying levels of infrastructure development. For example, the ability of a country to move goods by truck and rail can be determined by looking at the density of road and rail as measured by kilometers of highways and track per 1,000 sq. km.

In truck situations, the Netherlands has the highest road density in the EC with 2,474 km. of highway per 1,000 km. Germany is not far behind with 2,010. But Spain has only 303 km. of roads per 1,000 sq. km., Italy has only 1,006 km., France 1,481 and the UK with 1,553. These differences influence how well each country will handle increasing demands on logistics in the future.

In the case of rail, Germany's coverage is nearly double that of most other countries. It has 121 km of rail per 1,000 sq. km. while France, Italy, the Netherlands and the UK have between 63 and 69 km of rail per 1,000 sq. km. Spain has only 28. In addition, the entire EC only moves a total of 8.7 percent of total tonnage. Part of the reason for this relatively low percentage is that the national railroads continue to emphasize passenger traffic. Multimodal or combined transport systems (European version of piggyback) book an even lower 2 percent of total freight carried in Europe. Clearly there is a real opportunity for growth, provided that the national railways can agree on a common system.

The significance of these numbers is that a truck or rail-oriented distribution strategy that will work well in some EC countries, will run into problems in Spain and Italy. And since highway and rail infrastructure take years to develop, these marked differences

continued

BREAKDOWN OF TRANSPORT EXPENDITURE

(percent)

	Germany	Spain	France	Italy	Neth.	UK	Overall
Labor	48.6	34.0	31.8	41.2	26.0	39.0	36.8
Staff	5.9	18.8	12.6	18.2	14.1	7.0	12.8
Garage	2.5	0.9	0.5	3.8	9.0	17.0	5.6
Maint.	10.4	6.0	17.6	7.5	8.7	N/A	8.4
Depn.	17.0	8.4	1.2	8.8	6.3	12.0	9.0
Fuel	9.5	7.2	9.6	19.3	24.3	19.0	14.8
Ins./Lic.	5.9	3.5	15.7	1.0	7.6	3.0	6.0
Hire	0.2	21.2	11.0	0.2	4.0	3.0	6.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

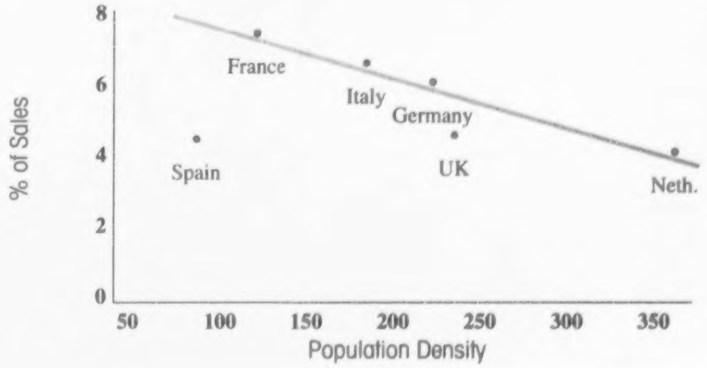
BREAKDOWN OF STORAGE EXPENDITURE

(percent)

	Germany	Spain	France	Italy	Neth.	UK	Overall
Labor	42.7	39.5	52.1	42.1	35.0	44.0	42.6
Staff	18.1	23.1	16.8	22.9	12.1	10.0	17.2
Rent	8.8	11.8	3.7	4.7	13.4	16.0	9.8
Power	7.7	2.8	9.2	4.1	6.8	6.0	6.1
Maint.	7.2	4.4	4.6	5.8	6.8	3.0	5.3
Security	1.6	1.7	5.1	1.3	3.7	3.0	2.7
Pallets	2.7	1.8	2.8	4.2	6.3	4.0	3.6
Depn.	7.2	12.7	4.1	10.8	8.0	7.0	8.3
Insurance	3.3	1.7	0.7	4.0	4.5	3.0	2.9
Hire	0.7	0.5	0.9	0.1	3.3	4.0	1.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

are likely to cause distribution problems for years to come.

COMPARISON OF LOGISTICS COSTS AND POPULATION DENSITY



In the economic area, one of the factors influencing logistics systems is the intra-European trade balance of each country (*See page 2*). The substantial trade imbalances for Germany, Spain and the U.K. manifest themselves in unequal flows of goods to and from these countries, translating into difficulties in finding return loads, and therefore higher rates. Wages make up between 30 percent and 50 percent of total distribution costs. The report points out that wage rates vary from ECU 5.8 in France to ECU 9.7 in Germany (One ECU = $1.25).

The logistics environment is measured by rental costs and vehicle operations price. Rental values associated with warehouse facilities can represent up to 20 percent of the cost of running a warehouse (*See page 4*). The researchers find that this element, combined with the transport rate levels, greatly influence the existing differences in logistics structures in the various countries. Transport rates are largely influenced by great variations in fuel rates and taxes (*See page 4*). Diesel fuel prices show a difference of 18 percent before government taxation and 45 percent after it.

The European logistics environment depends on population density, infrastructure, and economic viability.

Total logistics expenditure by country ranges from 4.62 percent of sales in the Netherlands to 7.22 percent in France. The report suggests that these differences in expenditures can be explained by the variations in population density and infrastructure, fuel and vehicle taxation rates, and wage rates. Taxation rates and the infrastructure will be brought more in line within the confines of EC policies.

The report also includes different logistics cost figures produced by the New Jersey-based consulting firm of Herbert W. Davis and Co. According to these cost figures, which are uniformly higher than the ILDM study figures, the UK reported the lowest total logistics costs at 6.79 percent of sales. Germany's logistics costs of 10.35 percent of sales were the second highest because of its highly regulated transportation system which protects its carriers from rate and entry competition (*See Logistics Benchmarks, page 88*).

The report also studies three specific elements of logistics practice: the use of third-party contractors, the use of computer systems, and service level specification in contracting. Third party contracting is based on sharing contractors' facilities and resources with other users, while dedicated contracting is still in the minority.

Computer use is highest in commercial functions, like order processing and inventory management. They are used less for operational functions, such as demand forecast, DRP, and vehicle scheduling. In general, French, British and Italian companies make less use of computer systems for logistics than their Spanish and Dutch counterparts.

The report concludes that a wide variation in logistics practice and costs exist around Europe because of economic, social and demographic differences among the countries. The clear implication is that companies wishing to establish a truly European logistics network will have to take these differences into account as they plan their networks. They should learn from alternative approaches and adopt "best practices" wherever possible.

A LOOK AT EUROPEAN LOGISTICS COSTS

DISTRIBUTION COST—PERCENT OF SALES

	Global	U.S.	Europe	France	Germany	UK	Neth.	Sweden
Transportation	3.00%	3.30%	2.53%	2.15%	5.81%	2.71%	1.91%	3.10%
Warehousing	2.15	2.07	2.29	2.08	2.21	1.62	3.04	3.65
Order Entry/ Customer Service	0.85	0.64	1.16	1.01	1.75	0.67	2.14	0.87
Administration	0.43	0.38	0.51	0.52	0.51	0.40	0.57	0.52
Inventory	1.90	2.00	1.76	1.62	0.82	1.43	2.37	2.95
Total	8.13%	8.18%	8.10%	7.29%	10.35%	6.79%	9.66%	11.02%

As more U.S. companies set up European distribution networks in the Single Market, they learn a valuable lesson: Logistics is done differently in Europe.

These differences are cultural, practical, geographical, and deomographical. U.S. companies must understand the differences before they can operate an efficient distribution system in Europe.

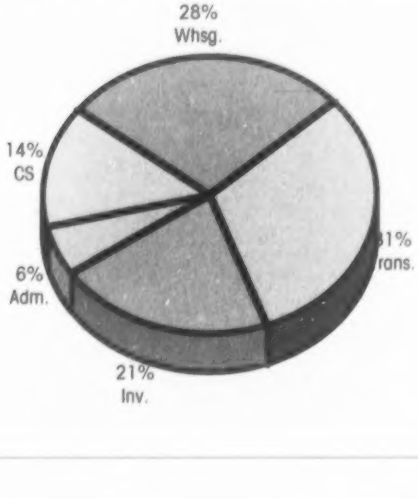
Until a true Single Market exists, smart logistics people are planning their networks to meet future European business patterns. Plants and warehouses are handling large regions of the Continent rather than just a single country. Manufacturers are sourcing from all points in Europe and beyond. Carriers and logistics providers are offering broad geographic coverage.

A look at European logistics costs, gathered by the consulting firm of Herbert W. Davis and Co., based in Engelwood Cliffs, N.J., shows some of the important differences that now exist. The U.K., which has an excellent deregulated transportation market, reports the lowest total logistics costs at 6.79 percent of sales. France, which boasts wonderful computer systems for order entry and customer service, is at 7.29 percent of sales. Germany's logistics costs of 10.35 percent of sales are the highest in the EC because its regulated transportation system protects carriers from rate and entry competition.

European logistics costs are higher than in the U.S.because European companies have treated each country as a separate market with separate production, sales and distribution systems. Among the penalties for this system has been higher transportation costs caused by border-crossing delays, congestion and stopoffs. The Single Market will eliminate border delays and allow Continent-wide transportation companies to offer better service at better rates, forcing costs to go down.

The Davis Database also shows that European logistics costs are different from those in the U.S., where transportation is the dominant component making up 39 percent of the total costs. In Europe, transportation makes up only 31 percent of total logistics costs. Warehousing takes up 28 percent of the European logistics budget, while it is only 23 percent in the U.S. These percentages are likely to align when Europeans start using transportation to eliminate the number of warehouses in their distribution networks.

EUROPEAN COMPANIES



U.S. COMPANIES